MEASURING THE EFFECTS OF A THERAPY DOG ASSISTED READING INTERVENTION FOR THIRD-GRADE STUDENTS WITH DYSLEXIA: A MIXED METHODS CASE STUDY

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Measuring the Effects of a Therapy Dog Assisted Reading Intervention for Third-Grade Students with Dyslexia: A Mixed Methods Study

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ABSTRACT

Students with dyslexia often struggle with literacy acquisition and require reading interventions to improve their skills. This sequential mixed methods case study examines how a reading intervention that utilizes a therapy dog affects reading fluency, anxiety, motivation, and self-efficacy among third-grade students with dyslexia. Seven students were provided with a reading intervention in which they practiced oral reading twice per week for twenty minutes with a teacher certified in special education and a registered therapy dog. Four students had the intervention with the therapy dog present and three students had the intervention without the therapy dog present. Quantitative pre- and post-intervention data on reading fluency as measured by the easyCBM Passage Reading Fluency Assessment, anxiety, as measured by the Abbreviated Reading Anxiety Questionnaire, and motivation, as measured by the Motivation to Read Profile, was collected. Qualitative data on feelings of self-efficacy among students in the therapy dog group were collected through individual interviews with the participating teacher in addition to observational data. Inferential statistics were not possible because of the small sample size; however, percent changes from pre- to post-test were calculated for each measure. Findings support the use of therapy dogs as a tool to augment strong literacy instruction and support the social emotional needs of students. Students in the therapy dog group showed greater percent increases in reading fluency from pre- to post- assessment than students in the non-dog group; greater percent decreases in their levels of anxiety from pre- to post- assessment; and an increase in total reading motivation and self-concept as readers. Themes of ‘reading enjoyment’, ‘improved reading confidence’, and ‘decreased anxiety’ emerged through interviews on how students with dyslexia feel about their self-efficacy as readers when in the presence of a therapy dog.

DEDICATION

This dissertation would not have been possible without the love, support, and encouragement of my family. My parents instilled in me the value of being a lifelong learner and finding joy in learning. They led by example showing me that hard work and family make achieving goals possible. Their careers in education taught me that this field opens up many opportunities to help others as they both continue to do everyday. I want to thank them for the countless hours they both spent with Hanna so that I was able to focus on my work. This truly would not have been possible without their help.

To my husband, Tim, thank you for encouraging me to go back to school when I first expressed an interest. Your words of encouragement and belief in me helped me to continue working and writing even when it was most challenging. Thank you for always encouraging me to go after my goals and being so proud of my work, it means the world to me.

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TABLE OF CONTENTS

LIST OF FIGURES…….....v

LIST OF TABLES…….....vi

CHAPTER 1 INTRODUCTION …….....1

CHAPTER 2 LITERATURE REVIEW ……...23

CHAPTER 3 METHODOLOGY …….45

CHAPTER 4 RESULTS…….....66

CHAPTER 5 SUMMARY, CONCLUSION, AND RECOMMENDATIONS……..…103

REFERENCES……....119

APPENDIX A Reading Anxiety Scale…….....131

APPENDIX B Motivation to Read Profile…….....132

APPENDIX C Interview Protocol…….....138

APPENDIX D Reading Session Protocol…….....140

APPENDIX E Reading Session Observation Notes……...…….141

APPENDIX F Letter Granting Permission to use Reading Anxiety Scale……..142

APPENDIX G CITI Program Certificate…….....143

APPENDIX H Letter to Head of School/Memorandum…….....144

APPENDIX I Letter to Parents/Informed Consent…….....146

APPENDIX J Letter to Participating Teacher/Teacher Agreement……...…152

APPENDIX K Therapy Dog Registration/Pet Partners Permission…….....154

APPENDIX L Pet Partners Confidentiality Agreement…….....155

LIST OF FIGURES

Figure 1 Concept Map…….....12

Figure 2 Conceptual Framework for Animal Assisted Therapy……33

Figure 3 Diagram of Mixed Methods Sequential Design……..50

Figure 4 easyCBM Passage Reading Fluency Assessment Pre-and-post Intervention Scores…..82

Figure 5 Weekly Informal Running Record Individual Scores……...…..85

Figure 6 Abbreviated Reading Anxiety Questionnaire Pre-and-post Intervention Scores……....87

Figure 7 Motivation to Read Profile Scores Pre-to-post Intervention……...90

Figure 8 Motivation to Read Profile Percent Change in Scores Pre-to-post Intervention…….90

Figure 9: Summary of percent change for each measure for dog group…….....…..99

Figure 10: Proposed Theoretical Framework for Animal Assisted Therapy……...106

LIST OF TABLES

Table 1 Oral Reading Fluency Norms……...77

Table 2 Student Reading Levels Pre Intervention…….79

Table 3 easyCBM Passage Reading Fluency Assessment Pre-to-Post Intervention Scores…….81

Table 4 Weekly Informal Running Record Words Read Correctly Per Minute……....84

Table 5 Abbreviated Reading Anxiety Questionnaire Scores and Percent Change Pre-to-Post Intervention……....86

Table 6 Motivation to Read Profile Scores and Percent Change Pre-to-Post Intervention……...89

Table 7 Interview Times……..……..91

Table 8 Interview Quotes and Themes…….....93

CHAPTER 1: INTRODUCTION

Research in the field of learning disabilities shows that children with dyslexia experience difficulty learning to read (Conway, Brady, Misra, & Allen, 2017). For these children, literacy skills, such as decoding, fluency, and comprehension, are not easily acquired without reading instruction intervention (Ehri, 2014). Dyslexia is characterized by difficulties with accurate and fluent word recognition, as well as with poor spelling and decoding abilities, due to a phonological deficit (Shaywitz & Shaywitz, 2005). Addressing children's reading difficulties early is crucial to ensure that such students do not fall behind their peers and to prevent a lack of academic achievement throughout their schooling. Struggling readers, including those with dyslexia, may experience low achievement in all academic areas, as these students have difficulty accessing the grade-level texts used to teach content across subjects (Ecklund & Lamon, 2008). Literacy interventions for struggling students are crucial in ensuring children are reading at grade level.

The National Reading Panel (2000) identified five key elements of reading instruction necessary to help children develop reading skills. These were instruction in phonemic awareness, phonics, comprehension, fluency, and vocabulary. For struggling readers, practicing these elements of reading poses challenges that can cause anxiety and frustration. These reading difficulties are often accompanied by a lack of motivation to practice the skills that are most challenging. Children who do not view themselves as proficient at something often avoid that activity when they feel anxious (Eysenck & Calvo, 1992). The challenges associated with reading disabilities, like dyslexia, put affected students at risk for falling behind peers without such disabilities, particularly in reading and literacy. According to the Education Commission of the States, only 61% of students diagnosed with a learning disability graduate from high school

(Education Commission of the States, 2016). Educators continue to face the challenge of how to help struggling readers develop their literacy skills so that they can achieve academically and be in command of their own learning. If they can develop a reading intervention that both effectively addresses reading challenges and the feelings of anxiety and frustration facing students with disabilities, these students will be able to approach their academic difficulties without the added emotional burden that often accompanies reading disabilities. Moreover, all educators should strive to promote the idea of enjoyment in reading among struggling readers.

One novel intervention strategy is the use of a therapy dog to augment an explicit, systematic, research based literacy intervention. If a therapy dog assisted reading intervention is found to have a positive impact on reading fluency, anxiety, and motivation among dyslexic students, educators will have a unique tool for helping struggling readers improve their reading skills and their feelings towards practicing reading. In order to begin to explore these possibilities, this chapter includes a statement of the problem, an overview of the purpose of the study, the theoretical and conceptual framework that guides the research, the research design and questions, and the significance of the study and its implications for literacy interventions that meet social emotional and academic needs.

Background

Various instructional strategies have been developed to help struggling readers enhance their skills. One-to-one tutoring, small-group instruction, whole-class instructional programs, and technologies such as computer assisted instruction have been used to help increase reading skills amongst struggling readers (Slavin, Lake, Davis, & Madden, 2011). In a review of various instructional interventions, Slavin, Lake, Davis, and Madden (2011) found one-to-one intervention the most effective strategy for improving the reading skills of struggling readers.

Serravallo and Goldberg (2007) assert that individualized reading instruction simultaneously supports a student's strengths while coaching the student to improve the skills with which they are nearing proficiency. For students who struggle with reading fluency, however, a one-on-one reading intervention may cause anxiety (Eysenck & Calvo, 1992; Grills et al., 2014; Novita, 2016). Therapy dog assisted reading interventions provide students with the opportunity for individualized attention while addressing the social emotional challenges struggling readers experience.

The use of a therapy dog for reading interventions is growing, yet there is limited empirical research on the effectiveness of such therapy programs for students with dyslexia. Lenihan, McCobb, Diurba, Linder, and Freeman (2016) examined the effects of reading to dogs on reading ability and attitudes in elementary school students. Le Roux, Swartz, and Swart (2014) looked at the impact of an animal-assisted reading program on reading skills among students labeled as "poor readers." Paradise (2007) studied how therapy dogs acted as motivators for children identified as "reluctant readers." Treat (2013) conducted a study looking at animal-assisted reading interventions for students with a variety of disabilities, such as ADHD, language-processing disorders, dyslexia, visual-processing challenges, and working-memory challenges. According to Gee, Griffin, and McCardle (2017), more research in the field of therapy dog-assisted reading is needed and should address different types of instruction, various reading abilities, and what, if any, feedback or guidance is provided during practice "to determine the value of these programs both directly to improve reading and indirectly to improve reading/learning through greater motivation and self-efficacy" (p. 5). Therapy dog-assisted reading interventions for third-grade students with dyslexia alone have not been examined in the literature. The aim of the current study is to measure the impact of a therapy dog on fluency,

anxiety, and motivation among students with dyslexia during a one-to-one reading intervention. This is a mixed methods case study in which quantitative data on fluency, motivation, and anxiety will be measured and additional insight on student perceptions of themselves as readers will be provided through qualitative data from semi-structured interview questions. The current study is needed in order to provide empirical data on the practice of using therapy dogs as part of a reading intervention. If positive results are found, educators will have an additional tool to help struggling readers. However, if positive results are not found, educators will still glean critical information regarding strategies for reading practice for students with dyslexia.

Statement of the Problem

A report by the National Endowment for the Arts showed that almost half of Americans between the ages of 18 and 24 years old do not read books for pleasure (Sullivan, Nichols, Bradshaw, & Rogowski, 2007). Teaching reading should not only be about teaching a skill but also about showing students that reading can be enjoyable (Murphy, 2012). For struggling readers, finding pleasure in reading can be a challenge. Helping students view reading as a fun activity, which could then help foster their intrinsic motivation to read, may require unique approaches. The National Reading Panel (2000) identified instruction in phonemic awareness, phonics, comprehension, fluency, and vocabulary as essential for reading success. Despite the understanding among educators that these are key elements in literacy instruction, students still struggle even while receiving instruction in these areas. According to Slavin et al. (2011), children struggle with literacy for a variety of reasons, including "processing deficits, deficient neuropsychological functioning, lack of sufficient experience or support at home, lack of facility in English, and insufficient preschool experience" (p. 2). For struggling readers, it is particularly important that they receive systematic and explicit reading instruction; however, many teachers

are not implementing such strategies in the classroom largely due to a lack of training in explicit instructional strategies in literacy (Gill & Kozloff, 2004). Additionally, though research has indicated that one-to-one tutoring succeeds in helping students improve their reading skills (Slavin et al., 2011), the average classroom teacher has limited time for one-to-one practice with students. As a result, teachers employ other research-driven techniques for improving reading skills with the whole class, such as previewing vocabulary, developing book discussion skills for comprehension, and repeated reading to build fluency (Jones, Yssel, & Grant, 2012). When time allows, educators often take on a coaching role when working with struggling readers, wherein the student practices and the educator provides immediate feedback. Struggling readers often experience anxiety when they must practice skills that are difficult for them. According to Katzir, Kim, and Dotan (2018) reading anxiety is negatively correlated with reading self-concept. The feeling of anxiety associated with being regularly assessed causes some students to seek to avoid reading altogether. As a result, educators are challenged to not only teach essential literacy skills to students, but also to help students with reading difficulties engage with texts and; receive coaching and feedback; without causing these students anxiety. Educators need to be equipped with a variety of effective literacy interventions that can reach struggling students, particularly those who have disabilities with specific needs (Ritchey, 2011). Often our most challenged students need an approach that will make them feel safe when they are at their most vulnerable. One intervention that has shown the potential to reach struggling students is animal assisted therapy.

According to Jalongo, Astorino, and Bomboy (2004), “Animal assisted therapy is founded on two principles: children’s natural tendency to open up in the presence of animals and the stress-moderating effect of an animal’s calm presence” (p. 10). Although 3,500 animal

assisted therapy teams are used for reading interventions in schools and libraries across the United States and internationally, the empirical research to support the use of this form of intervention is limited (Intermountain Therapy Animals, 2016). Hall, Gee, and Mills (2016) conducted a systematic review of the literature on children reading to dogs in order to identify the scientific evidence base for the effects of these interventions. The researchers found that while there was a wide range of scientific measurement, most studies scored the lowest level on the Oxford Centre for Evidence-Based Medicine (OCEBM) scale, meaning they were low in quality. The study indicated that future research should use standardized measures for reading, control for baseline reading scores, and use larger randomized samples over a longer period of time. The current study will use the standardized reading measure of easyCBM Lite developed by Alonzo, Tindal, Ulmer, and Glasgow (2006). In addition to pre- and post-intervention fluency measurements, weekly progress monitoring will take place through the use of a running record. Although most studies examined indicated that the practice of reading aloud to dogs has the potential to improve reading skills in children, more rigorous scientific research is needed to draw conclusions on the topic. According to the International Dyslexia Association, 85% of students who are identified as having a learning disability have a primary learning disability in reading and language processing (Cowen, 2016). Statistics on students qualifying for remedial reading instruction clearly support the necessity of identifying instructional strategies intended to meet dyslexic students' academic and social emotional needs.

Purpose

The purpose of this mixed methods case study is to measure the effects of a therapy dog assisted reading intervention for third-grade students with dyslexia. Specifically, this study will explore the effect of a therapy dog assisted reading intervention on reading fluency, student

reading anxiety, and motivation. The participants in this study will include Grade 3 students diagnosed with dyslexia from a school in the Atlantic Corridor of the United States. The school requires that each student has a formal evaluation conducted by a licensed educational psychologist. An educational psychologist is qualified to diagnose dyslexia and other learning disabilities. The independent variable in the study is the presence of a therapy dog during a reading fluency intervention. The dependent variables include reading fluency, perceived anxiety, and motivation to read.

Rationale

While numerous educator accounts indicate that therapy dogs are an effective tool for helping struggling readers, there is limited empirical evidence to support the use of therapy dogs. Furthermore, though some teachers use therapy dogs, research regarding this practice among students who have been diagnosed with dyslexia is extremely limited. Without an empirical study, the impact of the use of therapy dogs on reading fluency, anxiety, and motivation to read remains unsubstantiated. This study aims to measure the effects of a therapy dog assisted reading intervention for students with dyslexia.

Research Questions

The purpose of the mixed methods case study is to examine the effects of a therapy dog assisted reading intervention for third-grade students with dyslexia. This study will seek to answer the following primary research question: What effect does a therapy dog assisted reading intervention have on reading fluency, reading anxiety, and motivation to read in third-grade students with dyslexia. The quantitative questions for the study are as follows:

1. Does reading aloud in the presence of a therapy dog improve reading fluency for students with dyslexia as measured by the easyCBM Passage Reading Fluency Assessment? (Alonzo, Tindal, Ulmer, & Glasgow, 2006)
2. Does reading in the presence of a therapy dog decrease reading anxiety for students with dyslexia as measured by the Abbreviated Reading Anxiety Questionnaire? (Katzir, 2018)
3. Does reading in the presence of a therapy dog increase reading motivation for students with dyslexia as measured by the Motivation to Read Profile? (Malloy, Marinak, Gambrell, & Mazzoni, 2013)

The qualitative question for the study is:

4. How do students with dyslexia feel about their self-efficacy as readers when in the presence of a therapy dog as indicated by interview responses?

Theoretical Foundation

The acquisition of reading skills in the elementary grades is a complex academic and social emotional process. The theoretical foundations that frame this study take into account reading development as framed by Chall's Stages of Reading Development, as well as the emotional elements of reading difficulties for students with learning disabilities through the lens of attentional control theory and motivation theory. Chall's Stages of Reading Development illustrates how reading acquisition occurs when skills are built upon and reinforced through direct instruction and student practice. Stage 2 highlights the importance of building reading fluency in Grade 3 in order to move from *learning to read* to *reading to learn* in later grades. This is a pivotal stage in which developing reading fluency allows students to access various content-specific texts as they become more proficient readers (Chall, 1996). The first research

question in this study that addresses reading fluency is grounded in Chall's Stages of Reading Development. Reading aloud is an important component of developing reading fluency because the act of reading words aloud helps students to develop their phonological awareness and develop sound symbol correspondence and word identification ability (Griffin, 1992). Students who struggle with reading because of a learning disability such as dyslexia may experience anxiety around practicing reading aloud (Novita, 2016). Attentional control theory helps explain why struggling readers may experience such anxiety (Eysenck, Derakshan, Santos, & Calvo, 2007). The theory posits that when a student perceives something as a threat, such as being asked to read aloud, they place all of their focus on worrying about the task rather than the task itself, thereby inhibiting their performance of the task. Therefore, for struggling readers, there is an academic component to reading development as well as an emotional component (Mammarella et al., 2014). Consequently, as educators, we must ensure that our interventions address both the academic and the social emotional components of learning. In addition to the anxiety a reading intervention can cause for dyslexic students, motivation to practice a challenging skill can wane when it becomes an unpleasant experience (Melekoglu, 2011). Self-determination theory (Deci & Ryan, 1985) explains how people become motivated and what they need in order to feel motivated. For students learning to read, practice time is essential. When students are not motivated to practice, they are unlikely to improve their skills. Self-determination theory explains that people require specific things in order to feel self-motivated, including feelings of autonomy, competence, and relatedness. Autonomy and choice can make students feel more positive about the work they are doing (Flowerday & Shell, 2015). Students with disabilities such as dyslexia may not feel autonomy over their own learning when they are placed in a specific reading group, pulled out for a specific intervention, and assigned specific books to read.

These decisions are made *for* these students and may make them feel as though much of their learning is beyond their own control. This study will provide students with some control over their learning because they are able to choose readings from a selection of texts and participation in the study is voluntary. Additionally, students with learning disabilities often struggle socially. When reading interventions begin to meet the social and emotional needs of students, self-determination and motivation are possible for struggling readers.

The pragmatic worldview supports the use of both quantitative and qualitative data in the current study (Creswell, 2014). While there is a need for additional empirical data to support the use of therapy dogs as part of reading interventions, the pragmatic worldview allows the use of qualitative data to provide further insight into the quantitative findings. For example, a researcher may discover that the quantitative data regarding the use of therapy dogs in a reading intervention shows increased fluency and motivation and decreased anxiety for students. Qualitative data would provide insight into those quantitative results. Qualitative data could shed light on how students felt and why, which may help explain quantitative results. Pragmatism grounds this study because the research takes place in a school and includes the social context of students (Creswell, 2013). Additionally, this research is intended to provide practical information for educators to reach struggling readers. According to Creswell (2013), this worldview allows researchers to focus on the practical implications of the research. Pragmatism places the research in a real-world setting so that educators are able to access information that can be applied practically.

Nature of the Study

The current study is a mixed methods case study in which quantitative data on fluency, anxiety, and motivation will be measured (Figure 1). Additional insight on student self-perceptions as readers will be provided through qualitative data from semi-structured interview questions. The key independent variable in the study is the presence of a therapy dog. Furthermore, this study includes three dependent variables. The first is reading fluency as measured by fluency scores with the easyCBM Passage Reading Fluency system (Alonzo et al., 2006). The second is anxiety as measured by the Abbreviated Reading Anxiety Scale (AMAS) (Katzir et al., 2018) (See Appendix A). The third is motivation-to-read as measured by the Motivation to Read Profile–Revised (Malloy, Marinak, Gambrell, & Mazzoni, 2013) (See Appendix B). Finally, additional information on readers' self-perception is gained through qualitative semi-structured interviews. While all students will receive the same reading fluency intervention over no more than a ten-week period, meeting twice per week for twenty minutes, only half of the students will have a therapy dog present. Measurements in reading comprehension and fluency will be examined prior to the intervention to ensure that the control and experimental groups do not vary significantly in literacy skills. Pre- and post-intervention measurements will also be taken for anxiety and motivation measures. Post-intervention scores in reading fluency, anxiety, and motivation will be analyzed to see if there were changes among those who participated in the therapy dog reading intervention. Data from interview questions will be transcribed and coded, and themes will be developed in order to gain further insight into students' self-perceptions as readers after participating in the therapy dog intervention. In reviewing the interview data, themes will emerge that will require coding (Creswell, 2014). A side-by-side data comparison will be conducted, in which the quantitative results will be

presented along with the qualitative findings that will confirm or deny the quantitative results (Creswell, 2014).

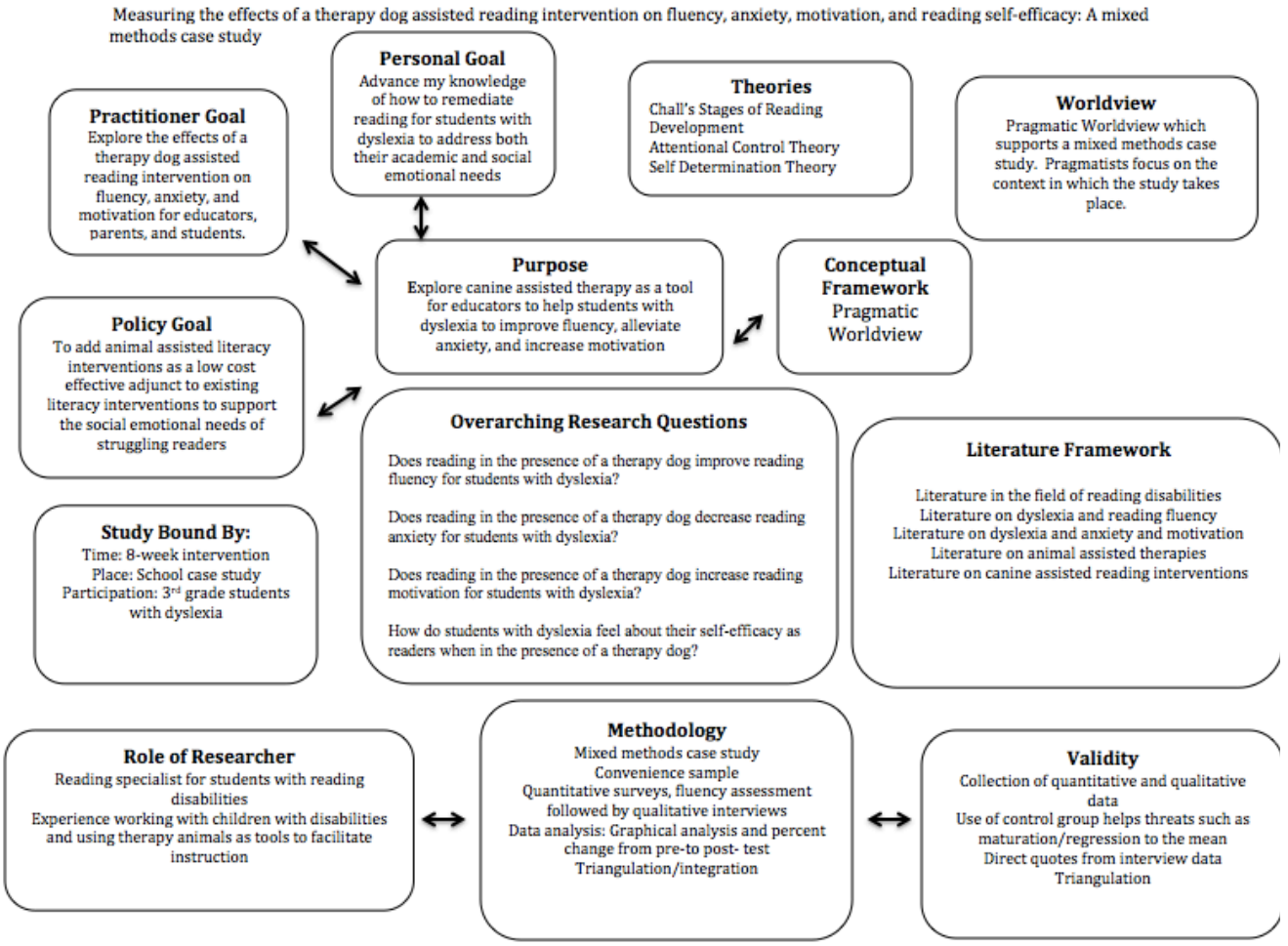

Figure 1. Measuring the effects of a therapy dog assisted reading intervention on fluency, anxiety, motivation, and reading self-efficacy among third-grade students with dyslexia: a mixed methods study.

Definition of Terms

Animal assisted therapy (AAT). "Animal assisted therapy is a goal-oriented, planned, structured, and documented therapeutic intervention directed by health and human service providers as part of their profession. A wide variety of disciplines may incorporate AAT. Possible practitioners could include physicians, occupational therapists, physical therapists, certified therapeutic recreation specialists, nurses, social workers, speech therapists, or mental health professionals" ("Pet Partners Industry Terms," 2018, para. 2).

Animal-assisted education (AAE). "Animal-assisted education is a goal-oriented, planned, and structured intervention directed by a general education or special education professional. The focus of the activities is on academic goals, prosocial skills, and cognitive functioning with student progress being both measured and documented" ("Pet Partners Industry Terms," 2018, para. 3).

Therapy animals (dog). "Therapy animals, such as those who participate in the Pet Partners Therapy Animal Program, provide affection and comfort to members of the public, typically in facility settings such as hospitals, assisted living, and schools. These pets have a special aptitude for interacting with members of the public and enjoy doing so. Therapy animal handlers volunteer their time to visit with their animals in the community. A therapy animal has no special rights of access, except in those facilities where they are welcomed. They may not enter businesses with 'no pets' policies or accompany their handler in the cabin of an airplane regardless of their therapy animal designation" ("Pet Partners Industry Terms," 2018, para. 5).

Registration. "Registration is the process through which a therapy animal team becomes part of the Pet Partners Therapy Animal Program. This process confirms that the team meets the requirements of our program and is suitable to participate in Animal Assisted Interventions (AAI). The handler must complete an online course and pass a written exam; the dog must pass a veterinary health check and temperament evaluation in which they complete obedience tasks, and are put in various situations intended to cause stress and their reactions gauged by a trained evaluator. There is a distinction between registration and certification. Therapy animal teams are registered, not certified. Certification implies that an independent third party has assessed an individual's mastery of knowledge and skills. For example, a doctor is certified by a Board of Medicine, not the medical school where they completed their education. At this time, no independent certifying bodies for therapy animals exist" ("Pet Partners Terms," 2018, para. 1).

Dyslexia. The definition of dyslexia has changed over time. For the purpose of this study the following definition will be used. According to Tumner and Greaney (2010), dyslexia is "persistent literacy learning difficulties, especially difficulties in word recognition, spelling, and phonological recoding, where phonological recoding is the ability to translate letters and letter patterns into phonological forms" (p. 231).

Reading fluency. "Fluency combines accuracy, automaticity, and oral reading prosody, which, taken together, facilitate the reader's construction of meaning. It is demonstrated during oral reading through ease of word recognition, appropriate pacing, phrasing, and intonation. It is a factor in both oral and silent reading that can limit or support comprehension" (Kuhn, Schwanenflugel, & Meisinger, 2010, p. 240).

Reading anxiety. According to Piccolo, Giacomoni, Julio-Costa, Oliviera, Zbonik, Haase, and Salles (2017), "Reading anxiety is an unpleasant emotional reaction experienced by students when reading" (p. 537).

Motivation to read. Having the motivation to read is engaging and persisting in an activity (reading) even when it is challenging (Urdan & Schoenfelder, 2006).

Self-efficacy. Self-efficacy is how students view their abilities, "Learners obtain information to appraise their self-efficacy from their actual performances, their vicarious experiences, the persuasions they receive from others, and their physiological reactions" (Schunk & Pajares, 1997, p. 2).

Reading intervention. A reading intervention is supplemental reading remediation beyond typical classroom instruction (Wagner & Espin, 2015).

Assumptions

Assumptions are aspects of the study that are believed to be true but cannot be guaranteed (Terrell, 2016). During the qualitative interview, one assumption is that the participants will answer the questions openly and honestly. Another assumption is that the participants want to take part in the intervention and are not externally motivated by something such as teacher or parental pressure. Participation in this study is voluntary so the assumption is that the participants want to take part. Additionally, the researcher is making the assumption that these students with dyslexia struggle with anxiety and motivation when singled out for reading interventions. However, pre-test surveys on anxiety and motivation will create a baseline for this.

Scope and Delimitations

The scope of this study includes students diagnosed with dyslexia who would typically be in the third grade. In Chall's Stages of Reading Development (Chall, 1996) there is a focus on

developing reading fluency in third grade students so that they are prepared for the transition to *reading to learn* in fourth grade and beyond, which is the basis for choosing Grade 3 students for this study. Students diagnosed with dyslexia were chosen for this study because studies indicate that these students have higher levels of anxiety and lower levels of self-esteem when practicing a difficult skill such as reading (Novita, 2016). It is necessary to find a reading intervention that addresses these social emotional components of their disability. The scope of the study includes students from an independent school serving students with language-based learning disabilities in the Atlantic Corridor of the United States. It was important to use a school specifically for students with language-based learning disabilities because it allows access to a greater number of students who fit the inclusion criteria. This access increases the chances for a larger sample size, thereby strengthening the internal validity of the study. Students excluded from the study will be those considered to be struggling readers who receive remedial reading support but who are not diagnosed with dyslexia and students reading at grade level. Excluding certain students from the study, and narrowing the inclusion criteria, increases the population validity of the study and provides specific information for students with dyslexia. The results from the interview questions regarding their experiences reading with a therapy dog and their feelings about themselves as readers are specific to this group of students and cannot be generalized to other students. However, information on fluency, anxiety, and motivation from this study may inform the activities of other reading therapy dog programs.

Limitations

Limitations are aspects of a study that are beyond the control of the researcher and which could have an impact on the ability to generalize the results of the study (Terrell, 2016). One limitation of this study is the smaller sample size. A case study such as this examines one group

of students, meaning that it is difficult to generalize the results to the larger population because each case is context specific (Creswell, 2015). Inclusion in the study requires students to indicate to their advisor that they are comfortable with dogs and are not allergic to them so that the students' experience is not skewed. The novelty of the presence of the dog should not play a role because students are used to campus dogs being present inside and outside of classrooms, as well as the presence of puppies affiliated with Guiding Eyes for the Blind that are socialized on campus. Another potential limitation could be the relationship between the teacher and the student. Each reading intervention session includes the student, the therapy dog, and the teacher. If the child has a positive relationship with the teacher, s/he will likely be comfortable reading in this setting; however, if the child is not comfortable with the teacher, the child's perception of his/her experience reading with the dog may be affected. The teacher–student relationship could impact external validity through "experimenter effects" (Terrell, 2016). Experimenter effects occur when participants in a study act differently because they know they are being watched (Terrell, 2016). In order to mitigate the impact of this particular limitation, the teacher will encourage the child to read to the dog and not to the teacher.

Significance to Theory

There is no theoretical model that has been developed to address animal assisted therapy in schools. This study aims to use theories on reading development, anxiety, and motivation in order to help explain how therapy dogs can aid in reading interventions among students with dyslexia. Chall's Stages of Reading Development (Chall, 1996) highlight the importance of developing fluency skills in Grade 3. The theory behind Chall's Stages of Reading Development is that if students develop fluency skills by Grade 3, they will be able to improve their comprehension and will be better prepared to access subject specific texts in the higher grades

(Chall, 1996). For students who struggle with reading, particularly those with dyslexia, reading can produce anxiety (Carroll & Iles, 2006). Attentional control theory explains that when someone perceives a threat, such as a struggling reader being asked to read aloud, all of his/her attention is focused on this perceived threat rather than on reading itself (Eysenck et al., 2007). In the current study, if the presence of the therapy dog can calm and relax the child, the child will be able to focus more on practicing reading. In general, people require motivation to take on a challenging task (Allington, 2013). For students with dyslexia, practicing reading is challenging, and they often do not have motivation to read (Melekoglu, 2011). Self-determination theory, as outlined by Deci and Ryan (1985), plays an important role in highlighting the various elements that motivate individuals, such as autonomy and relatedness. In the current study, students have the ability to select their own texts from appropriately leveled options, giving them control over their learning. Additionally, the therapy dog can act as a conversation-starter for students in the classroom, providing them with more opportunities to connect with peers. Expectancy value theory (Wigfield & Eccles, 2000) is another theory of motivation that explains how people behave based on their expectation of how they will perform. Struggling readers may not be motivated to read because they expect to struggle with the task.

Significance to the Practice

The goal of this study is to add to the limited body of empirical research on therapy dog assisted reading interventions. Despite the popularity of the practice and anecdotal evidence for the use of therapy dogs for reading interventions, the empirical evidence in the field is just beginning to emerge (Levinson, Vogt, Barker, Jalongo, & Van Zandt, 2017). This study not only examines the academic aspects of developing reading fluency among dyslexic readers, but also addresses the social emotional struggles of these readers by looking at anxiety and motivation.

This study will provide additional data on the type of support a therapy dog can provide to students during a reading intervention. This data will help practitioners who already use therapy dogs as a part of their reading interventions to focus on the social emotional dimensions in addition to the academic ones. Furthermore, this study has an impact on policies relating to the use of therapy animals for children more generally. The Eunice Kennedy Shriver National Institute of Child Health and Human Development has funded research on human–animal interactions relating to child health and development for the past several years, indicating an increased interest in this field of study (Processes in Social and Affective Development, 2017). The popularity of animal assisted interventions in educational settings could result in future policies excluding or including animals in schools. Currently, ten colleges including Yale Law School, Uconn, Occidental, RIT, Caldwell, Oberlin, and Mercy, all have successful therapy dog programs. This means that school leaders from elementary to college levels can inform their practices based on research into the efficacy of such programs. Policy makers will refer to studies such as the present one to develop evidence-based approaches to such policies (Gee, Griffin, & McCardle, 2017).

This study also has implications for policies on literacy interventions. Typically, policies for literacy interventions have focused on providing targeted literacy instruction to improve reading skills. In the 1990s the Clinton administration introduced the America Reads Challenge, which encouraged volunteer tutors to work with struggling readers (Slavin et al., 2011). The George W. Bush administration's No Child Left Behind Act introduced the Early Reading First Initiative in an attempt to provide students with targeted literacy instruction and ensure that they made adequate yearly progress (AYP) in reading. While statistically significant gains were achieved for some students under these policies, children with learning disabilities continued to

struggle in comparison to their peers and were therefore unable to close the achievement gap (Katz, Addison Stone, Carlisle, Corey, & Zeng, 2008). Response to intervention (RTI) was another approach that focused on addressing the specific needs of struggling students through small-group and one-to-one interventions (Slavin et al., 2011). Instruction was divided into three tiers, beginning with regular classroom instruction and moving to one-on-one instruction for students who needed further support. RTI sometimes helped to determine that a child might need to be evaluated for a learning disability and require targeted special education services. It is evident that some students with diagnosed learning disabilities, such as dyslexia, need more than just a targeted literacy intervention. These students also need support to overcome the emotional challenges associated with dyslexia. This study will provide insight into issues of anxiety and motivation among Grade 3 students. The use of a therapy dog as part of a reading intervention for students with dyslexia could be one innovative way to address the combination of reading and social emotional challenges these learners face.

Significance to Social Change

This study has the potential to promote positive social change for reading instructional practices so that they address the emotional needs of students in addition to the academic needs. This study could also promote positive social change among our struggling students. While children with learning disabilities often struggle socially and have trouble connecting with their peers, the presence of a therapy dog has the potential to facilitate communication among students (Womack, Marchant, & Borders, 2011). This could result in students having a more positive view of school and more enjoyable experiences during literacy interventions. Empirical evidence on this topic will provide the legitimacy needed to promote the practice among schools that do not currently utilize animal assisted therapy.

There are ethical considerations that are important when working with children. Children, particularly those diagnosed with dyslexia, are a vulnerable population. Parents of students taking part in this study will give their consent and must indicate that their children are comfortable with and not allergic to dogs. The therapy dog needs to be treated with kindness, and students will have opportunities to practice interacting with the dog. The current study will illuminate the use of a reading intervention that addresses both the academic and emotional challenges dyslexic students face when reading.

Summary

Learning to read is an important milestone and an exciting academic achievement for children. The ability to read lights the pathway for continuous learning which is essential for thriving in our globally connected world. As a society, literacy is a necessity for success in the United States. For students with dyslexia, learning to read is often laden with challenges, both academic and emotional. It is widely understood among educators that fluency instruction and practice and one-on-one reading interventions are helpful for struggling readers (National Reading Panel, 2000). However, despite such systematic literacy instruction, many students continue to face challenges (Gill & Kozloff, 2004). Students with dyslexia experience more anxiety around reading than students without dyslexia (Novita, 2016). Therefore, interventions for struggling readers need to address not only the academic elements of reading instruction, but also the anxiety and other emotional aspects of reading.

Chapter 1 highlighted the need for further research on therapy dog assisted reading interventions among third-grade students with dyslexia. The importance of targeted fluency instruction to reading development among dyslexic students was explained. The social and

emotional components of a reading disability were discussed in addition to the importance of addressing these during literacy interventions through the use of a therapy dog. The research questions for this study were introduced, based on Chall's Stages of Reading Development, attentional control theory, and motivation theory. Chapter 2 includes a review of the current literature on reading fluency, anxiety among students with dyslexia, motivation among students with dyslexia, the history of animal assisted therapy, and finally canine assisted therapy.

CHAPTER 2: REVIEW OF LITERATURE

Students with dyslexia struggle with the process of learning to read (Conway, Brady, Misra, & Allen, 2017). These students benefit from literacy interventions that target decoding, fluency, and comprehension to help them develop their reading skills. The challenges of struggling to read are often accompanied by feelings of inadequacy and anxiety related to reading. Dyslexic students in particular often experience anxiety associated with their achievement (Carroll & Illes, 2006). According to the National Assessment of Educational Progress (NAEP), only 61% of students diagnosed with a learning disability graduate from high school (Education Commission of the States, 2016). It is critical that educators are equipped with appropriate reading interventions that target reading skills and address the social emotional challenges students with dyslexia face. Therapy dog assisted reading interventions have the potential to serve as an additional tool for educators to reach struggling readers and make reading a more enjoyable activity.

The purpose of this study is to examine the effect of a therapy dog assisted reading intervention on reading fluency, anxiety, and motivation around reading among third-grade students with dyslexia. This chapter will provide information on how the literature search was conducted, the theoretical framework, and the key terms and concepts for the study.

Literature Search Strategy

The literature search strategy included several areas relating to literacy, reading difficulties, reading disabilities, reading intervention, motivation, and animal assisted intervention. Terms researched included: *animal assisted intervention*, *therapy dogs and classroom*, *reading and dogs*, *reading motivation and animal assisted intervention, animal assisted therapy and reading*, *therapy dog and reading*, *reading difficulties and reading*

disabilities, and *reading disabilities and therapy dogs*. Other search terms included: *anxiety and dyslexia*, *mental health and reading disabilities, and depression and disabilities*. Some of the databases used included: ProQuest, Eric Institute of Education Services, Sage Journals, Elsevier, Educational Research Review, and Ebscohost. There is a wide range of research on reading, reading difficulties, and reading disabilities, so this author reviewed seminal works on these topics while also looking at research from recent years. Some of the works included research from as early as 1985, while other research was from as recently as 2018. Most research studies were published between 2012 and 2018. The fields of education, psychology, and animal assisted therapy provided information for the current research. The Eunice Kennedy Shriver National Institute of Child Health and Human Development and the Education Commission of the States provided important information on literacy. The *Handbook on Animal Assisted Therapy* (2015), edited by Aubrey H. Fine, provided a wealth of resources and studies on animal assisted therapy. Available research on therapy dogs and reading is more recent; however, there is a lack of empirical research in the field of animal assisted interventions. A working title for the current study, "Animal Assisted Literacy Intervention for Students with Specific Learning Disabilities," helped guide some of the search terms. Central research questions included: What effect does a therapy dog have on reading achievement among students with specific learning disabilities? Does animal assisted therapy (specifically canine AAT) affect reading growth when implemented with students with specific learning disabilities? Does canine animal assisted therapy affect reading motivation among students with specific learning disabilities? What are the perceptions of students regarding the use of animal assisted therapy as it relates to their reading progress? Developing central questions also helped to guide some of the search terms. In examining reading and animal assisted therapy a range of research articles needed to be

reviewed. A matrix was created in order to organize the articles. First, articles were placed in categories including general reading difficulties, dyslexia, interventions for struggling readers, dyslexia and anxiety, reading motivation, animal assisted therapy, canine animal assisted reading interventions, canine animal assisted reading interventions for students with disabilities, reading acquisition theories, motivation theory, and cognitive theory. These categories allowed the researcher to look back at articles based on their specific topics. It also allowed the researcher to review more general and specific aspects of the topics based on how the articles were organized.

Theoretical Foundation

The field of animal assisted therapy has yet to identify one primary theory to frame research on the topic of using therapy animals for interventions in school settings. As a result, three theories are used to frame this research study. The theories reflect the major tenets of reading development, anxiety, and motivation. Chall's Stages of Reading Development, attentional control theory, and motivation theory each play a role in framing how therapy dogs can be used as part of a reading intervention to help struggling readers succeed.

Chall's stages of reading development. The first research question aligns with Chall's theory on reading development as it addresses the importance of increasing reading fluency (Chall, 1996). Chall identifies reading fluency as a key component of improving reading in Stage 2 of reading development. The method of providing students with a reading intervention that has them practice reading aloud to increase fluency also aligns with Chall's theory of developmental stages, wherein the key to fluid reading and comprehension is practicing oral reading. The basis of the reading intervention students receive in this study is oral reading practice to increase fluency. The second and third research questions are framed by attentional control theory and

motivation theory. Attentional control theory and motivation theory address how the anxiety students experience can impede their ability and desire to practice challenging skills.

Chall (1996) describes six developmental stages in which children learn to read, beginning with pre-reading, or Stage 0, from approximately the age of six months through preschool or about six years old. Stage 1 takes place in Grades 1 and 2 and is the time when children decode words and distinguish between spoken and written language. Stage 2 takes place in Grades 2 and 3 and is notable because it is the last stage of learning to read before children begin to read in order to gain knowledge. If children fall behind in Stage 2, they are at risk for academic struggles as they will not have the reading skills needed in order to succeed in higher grades. Stage 3 takes place in Grades 4 through 8. During this time children are reading and learning new information from texts and are expected to be able to read and interpret information. Stage 4 is the high-school level where students begin to understand multiple viewpoints when reading and read across a variety of genres. Stage 5 describes adults who are reading for pleasure or professional purposes and are able to construct meaning from various texts. It is crucial that students develop the skills at each stage in order to be successful at the more complex stages. Kuhn and Stahl (2000) conducted a study to provide a review of how children progress through the reading process to become fluent readers. The study uses Chall's Stages of Reading Development to better understand progression toward fluency because Chall's model provides a comprehensive understanding of how children move from individual word reading to fluency. In reviewing various studies on literacy instruction and fluency development, the researchers found Chall's stages model supported how fluency develops and builds on

previously established literacy skills. The results indicated that fluency instruction is effective for students with word-reading knowledge in late second grade and for older children with reading difficulties (Kuhn & Stahl, 2000).

The major tenets of Chall's reading theory are the specific stages through which students progress as they develop as readers. These stages of reading development frame the proposed study in terms of the grade level of the students in the study and the fluency focused reading intervention. Third-grade students were chosen on the basis of Chall's description of Stage 2; Third grade is a critical time to remediate students who are struggling before they reach the shift from learning to read, to reading to learn, that takes place in Stage 3. Chall also described the type of reading instruction from which students benefit at Stage 2, which included adequate time for reading and oral reading practice so that they can develop their reading fluency. Rasinski et al. (2017) conducted a study in which students took part in a 25-session summer reading clinic in intensive fluency instruction. The study showed that students who took part in the intervention made significant gains in their reading development, supporting the importance of fluency instruction for struggling readers. Chall's theory has been applied in this study because it recognizes the importance of fluency among third-grade students: "Thus, if we as researchers commit to accepting that reading competency by third grade is a major predictor of high school graduation and that reading competency is inextricably bound together with reading fluency, then we must redouble our research efforts to discover effective fluency instructional strategies" (p. 520). Treat (2013) conducted a study on an animal assisted literacy intervention for students with learning disabilities. The study examined the effect of a therapy dog on guided oral reading instruction. This study was framed by reading acquisition theory, which is similar to Chall's

Stages of Reading Development in that it emphasizes the importance of repeated oral reading and fluency development as critical to reading growth.

As Chall's theory suggests, reading requires practice time to increase fluency skills. However, for a struggling reader, the anxiety associated with practicing a difficult skill can be a roadblock to improving his/her reading. A reading intervention that includes a therapy dog could help alleviate some of that anxiety.

Attentional control theory. Attentional control theory addresses the impact anxiety has on cognitive function. Attentional control theory stems from Eysenck and Calvo's (1992) processing efficiency theory. According to the processing efficiency theory, the worry caused by a challenging task such as reading aloud diminishes the working memory available for the task. Attentional control theory explains that there are two attentional control systems, one which is goal driven and based on expectation, knowledge, and content goals, and one which is stimulus driven (Eysenck et al., 2007). According to this theory, anxiety decreases the influence of the goal-directed attentional system and increases the influence of the stimulus-directed attentional system. Attentional control theory posits that when a person interprets something as a threat, such as a struggling student being asked to read aloud, his/her level of distraction increases. Overall, it becomes increasingly difficult to focus on the task at hand. If a student with dyslexia perceives reading aloud as an anxiety producing activity, his/her focus is going to be on the anxiety s/he is experiencing rather than on practicing reading skills. Novita (2016) conducted a study that compared levels of self-esteem and anxiety among 124 students between the ages of eight and eleven with and without dyslexia. The results showed that children with dyslexia have

increased anxiety and lower self-esteem that is context specific. For example, while these children showed increased anxiety and lower self-esteem in school, those feelings were not apparent in other areas of their lives such as home life or free time. The proposed study aligns with attentional control theory because when a student sees something as a threat, such as reading aloud or school in general, it can impact his/her anxiety levels. When providing struggling readers with interventions, it is crucial to consider the anxiety they may feel when being asked to practice a difficult skill. One study conducted by Allen, Blascovich, Tomaka, and Kelsey (1991) looked at physiological stress responses in women conducting mental arithmetic while in the presence of a non-evaluative dog, versus a non-evaluative friend, and while alone. The results found that the least amount of stress, measured in changes in blood pressure and pulse rate, occurred when the women were in the presence of the dog rather than alone or in the presence of a friend. This study supports the idea that dogs may have a calming effect on some people. If an intervention can decrease the anxiety a student feels, the student will be more likely to focus on the skill rather than the anxiety.

For some students, reading with a therapy dog can create an enjoyable environment because the child does not feel they are being judged while reading aloud. Instead, the child has a sense of purpose (reading to the therapy dog) and they can even gain comfort from petting the dog in a low-stress setting while reading. Brickel (1985) explained that when animals are incorporated into a stressful situation, they distract the humans involved from the stress they feel. For struggling readers who may want to avoid reading because it is difficult, the therapy dog provides a calming distraction from their anxiety and allows them to continue with their reading

intervention. Griess (2010) conducted dissertation research in which she discovered that students spent on average 4.04 more minutes reading when reading in the presence of a therapy dog, indicating that the dog created a more comfortable reading environment for the child. If a therapy dog can create a more relaxing, stress-reduced environment for a child, the student is more likely to take part in the reading activity in the future. After repeated positive experiences reading with the therapy dog, students would eventually have a decrease in anxiety and more positive experiences practicing reading.

Self-determination theory. Not only can anxiety make it difficult for a child to focus on a specific skill, it can also cause students to want to avoid practicing that skill at all. If every time a student is asked to read, they feel anxious and uncomfortable, it is unlikely that they will feel the motivation to take part in that activity. Self-determination theory (Deci & Ryan, 1985) is a key theory of motivation in education. According to self-determination theory, students need to feel competence, relatedness, and autonomy in order for them to feel motivated. Competence relates to a student's increased motivation when they feel as though they have some control over the outcome of their learning and are able to experience mastery of the subject. Relatedness refers to the human need to interact and connect with others during learning and to experience caring for others. Finally, students are motivated when they feel they have some autonomy over their learning. According to De Naeghel, Van Keer, Vansteenkiste, and Rosseel (2012), students who were provided with autonomy in their reading showed more positive reading behaviors and improved reading performance. A reading intervention with a therapy dog meets some of the needs outlined by self-determination theory. For example, in this research study, children

experience competence because they begin practicing their fluency skills by reading books at their independent reading level. An independent-level text is one that the child is able to read with fluency and comprehension on their own (Fountas & Pinnell, 1999). The independent-level book allows the child to gain confidence and practice fluency skills, such as reading with expression without adult intervention. Once the child feels confident reading independent-level texts with the therapy dog, they can move on to instructional-level texts that challenge the reader. An instructional-level text is one that the child can read with some additional support from an adult and provides the student with the practice they need to elevate his/her reading level by introducing more complex vocabulary and sentences. According to self-determination theory, children are more motivated to move on to the challenging texts because they have experienced success and feel competent with the independent-level texts. Self-determination theory also explains the importance of students feeling connected to others. Students with dyslexia often experience frustration and feelings of inferiority that can impede their social interactions (Enkelada, 2016). The act of practicing reading with a therapy dog has been shown to increase social integration (Hergovich, Monshi, Semmler, & Ziegelmayer, 2002) and improve social interactions among students (O'Haire, McKenzie, & Slaughter, 2014). The proposed research study also aligns with the idea of autonomy in terms of reading motivation. In this study, students have the freedom to choose from a selection of texts at their reading level. As a result, children feel as though they are participating in a reading intervention where they have choice in what they are going to read while practicing their skills. Typically children take part in a reading intervention wherein they are told what to read, often texts printed from an online resource

designed for fluency instruction. Using the framework of self-determination theory, this study instead allows students to choose texts that pique their interest. According to Kuhn, Rasinski, and Zimmerman (2014), exposing students to real connected text allows students access to a wider variety and number of words, as well as more topics. Self-determination theory also explains that in meeting the needs of individuals, intrinsic motivation is eventually developed as people feel good about their achievements. Children are notified at the beginning of the study that they are free to stop participating in the reading intervention at any time. Students are told this so that they understand they have autonomy over their learning and their participation in the reading intervention. Schunk and Pajares (1997) similarly discuss the importance of self-efficacy in motivation and how students need to have control over their learning in order to feel motivated. Without this, struggling readers continue to avoid reading, and more successful readers become more motivated to continue reading, thus widening the achievement gap between them.

While the field of animal assisted therapy continues to grow and interventions using therapy dogs can be found throughout schools across the country, theoretical frameworks for animal assisted interventions remain scarce. However, this researcher's examination of various theories on the topics of reading acquisition, motivation, and anxiety contributes to the development of a framework to guide research in this field. Gee, Griffin, and McCardle (2017) suggest a theoretical framework that displays the effects of human animal interactions on both social emotional development and learning.

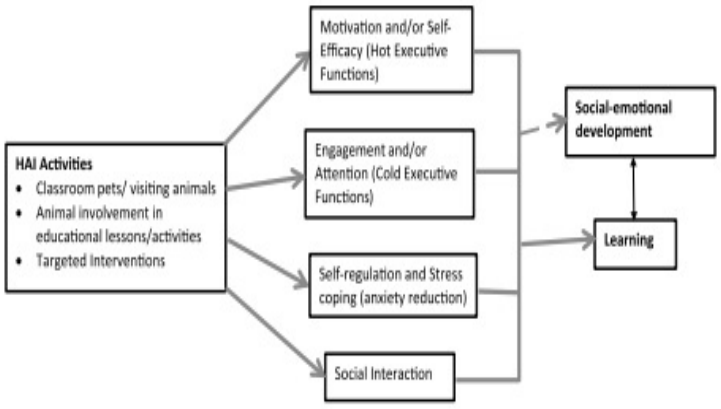

Figure 2. This proposed framework highlights the relationship between human animal interactions and the effects on motivation and self-efficacy, engagement, anxiety, social interactions, and the indirect effects on learning and social emotional development. From "Human-animal interaction research in school settings: Current knowledge and future directions" by, N. Gee, J. Griffin, and P. McCardle, 2017, AERA Open, 3, p. 3. Copyright 2017. Reprinted with permission from Sage Publishing.

Worldview. The pragmatic worldview addresses the need for both the quantitative and qualitative aspects of the current study (Creswell, 2013, 2014). The pragmatic worldview allows the researcher to combine both quantitative and qualitative methods when conducting research. This ability to draw from both quantitative and qualitative methods ensures that the researcher can measure outcomes through quantitative research and still have the opportunity to interview and interact with participants more organically through qualitative research (Creswell, 2014). According to Maxwell (2013), a benefit of qualitative research is that it provides more information on the process of the study rather than simply providing outcomes. While the current study will examine reading fluency outcomes, anxiety, and motivation through quantitative questions, qualitative interview questions will provide information on the process leading to the

outcomes on fluency, anxiety, and motivation measures. Through the interview questions in this study, a more thorough understanding of the experiences of the participants will be obtained, which surveys alone cannot provide. Allowing the participants to describe their anxiety and their feelings about reading and working with a therapy dog helps the researcher better understand the process and experience of reading with a therapy dog. According to Creswell (2014), the pragmatic worldview also accounts for the social context in which the research takes place. The current study takes place in the context of the school where the participants are regularly present, providing information related to their typical daily activities and social interactions. It is important to recognize that students are impacted by what is going on in the social context of their environment. The pragmatic worldview addresses the fact that understanding how struggling readers feel and how they experience anxiety while reading is complex and is best assessed through a convergent mixed methods study that allows for obtaining both quantitative data about fluency and anxiety and qualitative data about students' experiences and feelings. Through the qualitative aspects of the study, we are able to better understand the quantitative findings. According to Kivunja and Kuyini (2017), the pragmatic worldview addresses the need to understand the behaviors and beliefs of participants and how together these impact future behaviors. The pragmatic worldview allows for the practical application of the variety of research methods necessary to examine the problem under study.

Key Variables and Concepts

Fluency. Reading difficulties are often accompanied by feelings of low self-esteem, anxiety, and a lack of motivation to practice the skills that are most challenging for students with

reading disabilities (Enkelada, 2016). Unfortunately, the challenges that learning disabilities pose put these students at risk for falling behind their peers without learning disabilities, particularly in the area of reading (Ecklund & Lamon, 2008). The students who struggle often avoid reading, and as a result, their reading skills do not improve (Melekoglu, 2011). Each time they decline an opportunity to read, they are not able to practice their fluency skills and are not exposed to new vocabulary. Stanovich (1986) refers to this as the Matthew Effect, wherein poor readers remain behind their peers without effective early reading intervention. The National Reading Panel (2000) identified fluency as a key element in teaching reading. Struggling readers, particularly those with dyslexia, often experience difficulty with fluency. Instead of reading fluidly with expression, their reading is labored and much of the meaning is lost as they struggle with automaticity. As a result, the student's comprehension of texts is compromised (Rasinski, Homan, & Biggs. 2009). According to Rasinski (2004), measures of reading fluency are strongly associated with comprehension and general reading achievement. Developing reading fluency among struggling readers is an important step in improving overall reading skills. For struggling readers, developing reading fluency is also key to improving comprehension (Rasinski, Homan, & Biggs, 2009). Reading fluency is achieved through practicing reading with a wide variety of texts (Rasinski et al., 2017). Along with reading a wide array of texts, repeated reading is another tool for increasing reading fluency. Repeated reading is when a student is provided with multiple opportunities to read the same text so that they can focus on their expression and automaticity. Increasing reading fluency improves reading comprehension and overall reading achievement (Biggs, Homan, Dedrick, & Minick, 2008). Biggs et al. (2008) conducted a study in which middle-school students engaged in repeated reading using software that allowed them to sing songs. Not only was this form of fluency practice engaging, it addressed the need for repeated

reading to increase fluency. The results indicated that students who took part in repeated reading made seven months of reading gains over a nine-week period. The results continued to show reading improvements during a four-month follow-up assessment. Although some fluency instruction simply consists of reading lists of words, Tressoldi, Vio, and Iozzino (2007) found that for children with reading disabilities, reading connected text had a positive influence on improved fluency because students could use context to aid comprehension. For this reason, the current study will have students reading books rather than fluency word lists so that their fluency practice is not completed in isolation. Fluency interventions have been found to improve both fluency *and* comprehension among students with learning disabilities (Stevens, Walker, & Vaughn, 2016). The current study has the potential to both engage struggling readers and improve their overall reading outcomes through fluency practice. Diverse learners require instruction specific to their needs in order to overcome their particular challenges (Honig, Diamond, & Gutlohn, 2008). Despite early identification of students with learning disabilities, educators continue to face the challenge of how to help students overcome their reading difficulties and the feelings that accompany their struggle. According to Kuhn et al. (2014), despite solid reading instruction, a significant number of students continue to struggle in developing fluency skills. Additionally, Kuhn et al. (2014) explain that students who struggle with reading fluency benefit from encouragement. Working to improve reading fluency is one important aspect of reading instruction; however, addressing the emotional experiences of struggling readers is an important piece of the puzzle as well.

Anxiety. Reading disabilities do not simply pose challenges to understanding text. There are social emotional components of experiencing a reading disability that can impact a student's experience in school as well as their self-perception. Students with reading disabilities

experience higher levels of both social anxiety and general anxiety than their typically developing peers (Mammarella et al., 2014). Dyslexic students in particular often experience anxiety associated with their achievement (Carroll & Iles, 2006). Additionally, students with reading disabilities have higher levels of depression (Mammarella et al., 2014), have higher negative self-perceptions, struggle more with social skills, and often feel ostracized by their peers for not knowing how to engage (Womack et al., 2011). Students with learning disabilities often face stigmas associated with their disability, and the labels associated with these students can add to the negative emotions that students feel (Womack et al., 2011). As educators, it is crucial that we find instructional interventions that help students who experience higher levels of anxiety deal with this challenge. According to Beetz, Julius, Turner, and Kotrschal (2012), 90% of special education students have insecure attachment, which can limit a child's ability to reduce their own stress and anxiety levels. Beetz et al. (2012) conducted a study of 47 male children ages seven to eleven with insecure attachment and examined stress levels when the children took part in a stressful task and interacted with a dog versus a friendly person. The results indicated that the stress levels were lower when the children interacted with the dog. The negative feelings students experience can impact their motivation to take part in activities that cause them stress and anxiety. It is clear that educators must address these negative emotions while also finding interventions that motivate these students (Mammarella et al., 2014; Carroll & Iles, 2006; Womack et al., 2011; Beetz et al., 2012).

Motivation. There are several theories used to explain what motivates students. Self-determination theory by Deci and Ryan (1985) highlights that people feel more motivated when they have a sense of competence, opportunities to relate to others, and autonomy. Expectancy value theory explains that people act in a way based on what they expect the outcome to be.

According to Wigfield and Eccles (2000), an individual's persistence and performance around a task can be explained by how well they think they will perform. For struggling readers who expect to fail or struggle when they read, how they behave and whether they choose to practice reading may be impacted by their expectations of their performance. Students who struggle with reading, particularly those with reading disabilities, often do not feel the motivation to practice reading (Melekoglu, 2011) and engage in less voluntary reading than students who are stronger readers (Allington, 2013). If students are not motivated to read, they will not get the practice needed to achieve reading success (Gambrell, 2011). The Program for International Student Assessment (PISA) found that interest in reading predicted student reading comprehension (OECD, 2010). Sixty-four countries participated in the program and it was discovered that the students who enjoyed reading the most performed significantly better on reading assessments than those who did not enjoy reading. The study also discovered that 37% of students reported that they did not enjoy reading at all. These findings indicate that although decoding and comprehension skills are important to reading instruction, there is another key element to reading instruction that includes motivation and a reason to engage with text and enjoy the reading process. Gambrell (2011) explains that if students are not motivated to read, they will never reach their full potential as readers. The International Reading Association (IRA) also emphasizes the importance of reading motivation in helping students to develop as readers (Malloy, Marinak, Gambrell, & Mazzoni, 2013). Gambrell (2011) defines reading motivation as "the likelihood of engaging in reading or choosing to read" (p. 172). Gambrell (2011) explained that reading engagement is connected to motivation. Engaged readers are motivated to read to fulfill personal goals. According to Gambrell (2011) promoting reading motivation and engagement should be high priorities for all teachers.

The emotional aspects of practicing something difficult in front of a teacher (who is there to evaluate) can be a heavy burden for some students. Struggling readers are particularly vulnerable to anxiety when practicing reading. According to Carroll and Iles (2006), dyslexic students have higher levels of anxiety when reading than their peers. For students with learning disabilities who struggle to read, anxiety and motivation can prove to be serious obstacles to overcome. The need for alternative interventions that address not only the core components of reading instruction, such as fluency, but also the emotional dimension of reading fluency for struggling students has led to the use of therapy animals in the field of education (Wigfield & Eccles, 2000; Melekoglu, 2011; Gambrell, 2011; Allington, 2013; Carroll & Iles, 2006).

Animal assisted therapy. Throughout history, animals have been used in therapeutic settings. In ancient Egypt, dogs were used as part of the healing practices for those who were ill, and later Greeks used many of the same treatments involving dogs (Fine, 2015). Today, animals are therapeutically used to help those with psychological and emotional difficulties, as well as academic challenges. A recent study conducted by the department of psychology at Yale University examined the anxiety and affect of 78 children ages ten to thirteen following unstructured interactions with dogs. Through the use of the Trier Social Stress Test for Children and salivary cortisol measurements, the researchers found that interactions with the dogs boosted children's positive emotions and reduced anxiety (Crossman, Kazdin, Matijczak, Kitt, & Santos, 2018). Crossman et al. (2018) explained, however, that the study was unable to determine if the animal accounted for the treatment effects. Another study that also used the Trier Social Stress Test for Children examined the stress responses of 101 children ages seven to twelve when taking part in a stressful task, comparing when they were alone, with a pet, or with a parent. The children who were with a pet showed significantly lower perceived stress in comparison to the

two groups where the child was either alone or with a caregiver (Kertes et al., 2017). An increasing number of animal therapy teams are now being utilized in school settings. According to Fine (2015), while some schools have instituted a therapy dog as a part of the educational team on a campus, other organizations, such as Therapy Dogs United, have created therapy dog teams that travel to schools. One popular program is the Animal Care for Exceptional Children and Adults program, which aims to help support the social, emotional, physical, and developmental challenges of children and young adults (Fine, 2015). Hergovich et al. (2002) found that a therapy dog in a first-grade classroom increased independence, empathy, and social integration among students. O'Haire, McKenzie, and Slaughter (2013) examined the effect of guinea pigs used in animal assisted activities on the social functioning of primary students. They found that students showed growth in social skills and decreases in problem behaviors. Other education programs using animal assisted therapy focus on building empathy and respect for all living things through humane education (Fine, 2015). In addition to use among the general education population, animal assisted therapy has become increasingly popular among students with autism spectrum disorder. O'Haire et al. (2014) examined whether the presence of a dog improves social interactions among children with autism. Students ages five to twelve took part in an eight-week animal assisted activity program with dogs. The researchers noted significant improvements in social functioning of these students. In addition to developing social skills among students, animal assisted therapy is becoming increasingly popular for reading programs. Not only are changes in reading skills noted, but also changes in the social emotional elements of reading, such as motivation, confidence, enthusiasm, and self-perception (Kirnan, Siminerio, & Wong, 2016; Linder, Mueller, Gibbs, Alper, & Freeman, 2017; Shaw, 2013; Treat, 2013).

Canine animal assisted therapy in literacy. Reading Education Assistance Dogs (R.E.A.D.), established in 1999, is the largest canine animal assisted therapy program that focuses on reading. According to Shaw (2013), who interviewed students and teachers who took part in a R.E.A.D. program, teachers reported that students gained confidence in reading and that many students who were once reluctant readers enjoyed reading with a therapy dog. Some students reported that the dogs provided comfort to them while they were reading a story and that they felt more confident in their reading. Post-interview, Shaw (2013) concluded that the therapy dog acted as a facilitator in the relationship among the teacher, the student, and the act of reading. Although some schools follow the protocols outlined by the R.E.A.D. program, many educators use therapy dogs for reading via teacher-designed procedures and routines. A study conducted by Kirnan et al. (2016) examined whether students who participated in a reading-to-dog program would have higher reading scores than those in the control group. Kindergarten students showed a statistically significant increase in post-intervention reading scores. The study also revealed that special education students in particular showed a greater enthusiasm for reading after participating in R.E.A.D. Le Roux, Swartz, and Swart (2014) conducted a study in which they examined the effect of a reading-to-dog program on the reading rate, accuracy, and comprehension of third-grade students. This study was the first to control for the novelty factor of reading to a dog by including another novelty element for the control group. Reading comprehension scores among the experimental group were higher than those in the control group, indicating that animal assisted therapy may be a unique tool to help students improve reading skills. Smith (2009) conducted an evaluation of the SitStayRead program in which he examined whether the program was effective in improving students' engagement and reading outcomes. Smith (2009) found that there was a statistically significant improvement in fluency

scores following the program and that both students and teachers interviewed reported positive experiences. Increases in student confidence in their reading (Shaw, 2013) and motivation to read (Linder et al., 2017) were also noted in students who took part in a reading-to-dog therapy program at school. While most studies have explored animal assisted therapy among students without learning disabilities, Griess (2010) and Treat (2013) examined canine animal assisted therapy among students with diagnosed learning disabilities. Griess (2010) found that time spent reading increased for students when they were in the presence of the therapy dog, combatting the challenge of engagement. Treat (2013) found that student scores on the Gray Oral Reading Test–4 (GORT–4) increased following the animal assisted therapy and students reported positive feelings toward their experience with the therapy dog team. Both Griess (2010) and Treat (2013) indicate that canine animal assisted therapy may be a helpful tool for educators to use among students diagnosed with specific learning disabilities but that further research is required in this field.

Summary and Conclusion

The studies examined in this chapter support the current investigation into using a therapy dog as a part of a reading intervention for students with dyslexia. This researcher reviewed research on struggling readers, dyslexia and other specific reading disabilities, the social emotional components of reading disabilities, and animal assisted therapy. Additionally, this researcher examined various theories that could help to frame research on reading interventions in the field of animal assisted therapy, which included Chall's reading development theory, attentional control theory, and motivation theory. Finally, this researcher reviewed literature that addressed the history of animal assisted therapy, animal therapy in education, and

current studies on therapy dogs used in reading interventions. Many of the studies on therapy dogs in reading interventions examined increases in confidence and comfort (Shaw, 2013), motivation (Linder et al., 2017), and engagement (Smith, 2009; Griess, 2010) among students while reading with the dogs. Others examined increases in reading scores and time spent reading (Le Roux et al., 2014; Smith, 2009). Many of the current studies touch on both the social emotional and academic aspects of reading with a therapy dog.

Current themes in the literature on animal assisted therapy include a calming experience for students when in the presence of a therapy dog (Treat, 2013), a reduction in physiological responses among women in the presence of a dog when completing anxiety-inducing math problems (Allen et al., 1991), and overall reduction in stress for students (Fine, 2015). The present study aims to provide further insight into the anxiety that students with dyslexia feel when posed with a challenging activity such as reading aloud and how a therapy dog may influence that anxiety. Treat (2013) suggests that future research investigate what is involved in the shifting of student perceptions of themselves as readers when reading in the presence of a therapy dog. The current study aims to provide information about that potential shift in perception through the interview questions posed to students post-intervention and to better understand how and why their self-perception changed, if at all. Smith (2009) indicated that future research in the area of reading interventions with therapy dogs should be longitudinal in nature and have larger sample sizes. He emphasizes how few research studies offer empirical data on the effectiveness of therapy dog assisted literacy interventions; however, this is often challenging due to the limited time allowed for some interventions in schools and the specific

group of students needed to participate. The current study will take place in a school for students with language-based learning disabilities in hopes of increasing the sample of students who can take part. Chapter 3 includes the research design and rationale for the current study of how reading to a therapy dog helps dyslexic students with fluency, anxiety, and motivation.

CHAPTER 3: RESEARCH METHOD

The purpose of this study is to examine the effect of a therapy dog assisted reading intervention on reading fluency, student anxiety, and student motivation among third-graders with dyslexia. This chapter will describe the setting of the study, methodology, data analysis, validity threats, and ethical procedures.

Setting. The participants in this study will include students from a suburban school in the Atlantic Corridor of the United States who would typically be in third grade and who have been diagnosed with dyslexia. The school serves students with a variety of language-based learning disabilities. The National Association of Special Education Teachers has selected this school as a "School of Excellence" for the past seven years in a row. According to current school admissions data, for the 2018-2019 school year, there are 265 students, 79 females (30%) and 186 males (70%). There are 49 non-white students (18%) (19 females, 30 males), and 17 international students (6%) (1 female, 16 males). The student to teacher ratio ranges from 1:1 to 12:1. All teachers at the school are certified in special education, literacy, or both.

Research design and rationale. The central research question in this study is: What effect does a therapy dog assisted reading intervention have on reading fluency, reading anxiety, and motivation to read in third-grade students with dyslexia? The quantitative questions for the study are:

1. Does reading in the presence of a therapy dog improve reading fluency for students with dyslexia as measured by the easyCBM Passage Reading Fluency Assessment?
2. Does reading in the presence of a therapy dog decrease reading anxiety for students with dyslexia as measured by the Abbreviated Reading Anxiety Questionnaire?

3. Does reading in the presence of a therapy dog increase reading motivation for students with dyslexia as measured by the Motivation to Read Profile?

   The qualitative question for the study is:

4. How do students with dyslexia feel about their self-efficacy as readers when in the presence of a therapy dog as indicated by interview responses?

The independent variable in the study is the presence of a therapy dog as part of the reading intervention. One dependent variable is reading fluency as determined by easyCBM Passage Reading Fluency (Alonzo et al., 2006). Another dependent variable is student anxiety levels as indicated by the Abbreviated Reading Anxiety Questionnaire (Katzir et al., 2018). The third dependent variable is motivation as measured by the Motivation to Read Profile–Revised (MRP–R) (Malloy et al., 2013). The current research is an explanatory sequential mixed methods case study.

According to Creswell (2014), sequential mixed methods allow the researcher to first conduct quantitative research—in this case, information on reading fluency, anxiety, and motivation—and follow up with qualitative research that helps to explain the quantitative findings. According to Creswell (2014), case studies are bounded by time and activity. In this study, students participated in an eight-week reading intervention that started in Spring 2019. One of the challenges of doing research in a school setting is that the research needs to fit the schedule of the teachers and students. The current study examined a reading intervention program with therapy dogs because numerous elementary schools in the target public school district use therapy dogs as part of their reading interventions but do not have any data on the practice. Therefore, the current study aimed to examine these interventions to better understand their effectiveness in order to guide future interventions in these schools.

Role of the Researcher

The researcher in the current study carried out a mixed methods study. This required the researcher to collect both quantitative and qualitative data as together they provided a comprehensive understanding of the research problem (Creswell, 2014). The researcher employed a pragmatic worldview, which helped to explain the choice in mixed methods research. Pragmatism supports mixed methods studies, such as the current case study, because pragmatists focus on the context in which the study is taking place, which is particularly important to a case study taking place in a school (Creswell, 2014). Different schools have their own specific contextual elements such as teacher to student ratio which will be carefully described in this study. The researcher used qualitative data to gain a better understanding of the context in which the study took place because context often plays an important role in schools, where social interactions are crucial to developing students. Pragmatists use several approaches when collecting data and implementing procedures that best meet their needs (Creswell, 2014). Pragmatism lends itself well to research in a school setting because often researchers need to use different types of data collection to gain a comprehensive understanding of the problem. For example, students may perform a certain way on assessments and clarity can be gained by using qualitative data such as interviews to learn more. In the current study, the researcher used mixed methods in order to gain quantitative data on reading fluency, anxiety, and motivation. Qualitative data, including students' answers to the interview questions, provided the researcher with additional insight. Although the mixed methods approach allows for etic and emic perspectives on the part of the researcher, the current study was from an etic perspective. For example, the students worked with the therapy dog and the participating teacher administered the pre- and post-test quantitative measures on fluency, anxiety, and motivation. In the qualitative

portion of the study wherein students answered semi-structured interview questions about their experience reading with the therapy dog, the participating teacher asked the questions while the researcher observed. According to Lewis and Porter (2004), when interviewing children with learning disabilities, they may benefit from the emotional support of a familiar person, such as their classroom teacher, which is why the participating teacher asked the interview questions. Additionally, Lewis and Porter (2004) emphasize the importance of ensuring that interview questions are clear and that students have time to communicate their experiences. As a result, only three interview questions were asked so that students had time to process questions and answer them.

To conduct this study the researcher used ten years of experience as a literacy specialist for students with learning disabilities to develop research questions that provided insight into the academic and social emotional aspect of literacy development. Additionally, theories on reading development, anxiety, and motivation helped to frame the research questions. The researcher also drew on experience working with students with a wide range of disabilities and therapy animals. Experience using equine assisted therapy for students with autism through the Pegasus program and canine assisted therapy for struggling readers helped the researcher to develop interview questions that would provide insight into the role of the therapy dog during the intervention sessions. Maxwell (2013) explained that it is important for the researcher to be aware of their personal goals when conducting research. As an educator who has witnessed the positive effects of students working with therapy animals, including a non-verbal child saying her first word aboard a therapy horse and a child who experienced trauma smiling for the first time after the incident when meeting a therapy dog, it was important not to project these previous positive experiences onto the current study. To this end, it helped to take an etic approach in this

study and listen, rather than risk projecting the researcher's own thoughts onto the students' experiences and unintentionally influencing their answers to interview questions. Additionally, the researcher used member checks (Maxwell, 2013) in order to ensure that the participants' responses to interview questions were not misinterpreted or influenced by researcher bias.

Methodology

This study is a mixed methods case study. Pre and post intervention data was collected on two groups of students, one working with a therapy dog, one without. A mixed methods design aimed to answer the question of whether a reading intervention that included a therapy dog increased reading fluency and motivation, decreased anxiety, and why or why not. Such a design allowed for both the collection of quantitative and qualitative data. Quantitative data on fluency, motivation, and anxiety was collected first, followed by qualitative data on student feelings of self-efficacy. As displayed in Figure 2, a sequential mixed methods design uses qualitative data to help explain the quantitative results that are initially collected (Creswell, 2014). In the sequential mixed method approach, the qualitative data stage is a follow-up or extension of the quantitative data stage. The goal is to provide a more comprehensive understanding of the research questions. A mixed methods design such as this was selected because the qualitative data can further explain the quantitative results. Simply seeing an increase in motivation or a decrease in anxiety in quantitative data does not provide the full picture of how students experience the intervention and provide insight into their perspectives along the way. Following up quantitative data with qualitative data provided a more complete understanding of the experiences of students taking part in the reading intervention with a therapy dog.

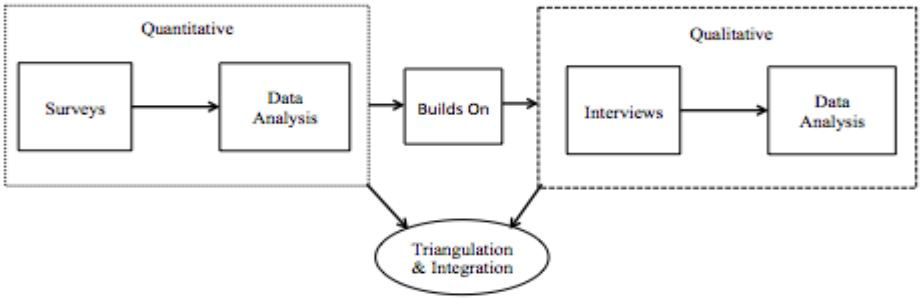

Figure 3. Diagram illustration of the mixed methods sequential design. Adapted from *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (p. 220) by J.W. Creswell 2014, Los Angeles: Sage with permission from Sage Publications. Copyright 2014 by Sage Publications. *Note.* The mixed methods sequential design includes the quantitative data collection (surveys and assessment) and analysis stage and the qualitative data collection (interviews) and data analysis stage. In the sequential design the qualitative data is a follow-up stage that builds on the quantitative data.

Sampling. The target population for this study was third grade students diagnosed with dyslexia who were struggling readers and reading below grade level. The participating students attended a suburban school in the Atlantic Corridor of the United States. Participation in the study was entirely voluntary. The sample size was 7 students diagnosed with dyslexia, 4 of whom participated in the therapy dog reading intervention and 3 who received the same reading intervention without the therapy dog. The participants were selected based on the inclusion criteria of being a Grade 3 student with a diagnosis of dyslexia documented in a formal evaluation, and below-grade-level reading scores on the school's standardized reading assessment. Participant scores on the school reading assessment indicated that they read at least one, but no more than three levels below their grade level. Exclusion criteria for the study were those students who were not diagnosed with dyslexia or those diagnosed with dyslexia who read at grade level. Additionally, students who were fearful of or allergic to dogs were excluded from the study. Although all students needed to meet the inclusion criteria, the sample was a non-

probability convenience sample based on the need to fit school day schedules and student availability. A power analysis was conducted to determine an appropriate sample size using GPower; it determined that an appropriate sample size would be 24 students. The effect size was 0.30, which is a "medium" effect size according to Cohen (1992); alpha level 0.05, and power level 0.80, are standard (McDonald, 2014). Given the specific inclusion criteria for this study, and the small size of the school, it was not possible to amass 24 students. However, a sample size of seven was feasible. This sample size of seven hindered the ability to draw statistically significant conclusions but still provided valuable insight into reading fluency, anxiety, and motivation among students with specific needs at this school.

Procedures for recruitment, participation, and data collection (primary data). Third-grade students were recruited for the study based on advisor recommendations using data from school-administered reading assessments that indicated that students read at least one but no more than three levels below grade level and an evaluation with a diagnosis of dyslexia. Advisors also recommend students who fit the aforementioned criteria based on student comfort levels with dogs, anxiety toward reading aloud, and student interest in taking part in a fluency reading intervention. Advisors chose students who indicated verbally that they are comfortable with dogs and had an interest in participating in a fluency intervention for the treatment group. Parents also helped to confirm with the advisor whether their children were comfortable with dogs and had a desire to participate. Students in the control group did not need to fit the dog-related criteria for inclusion. Research shows that students with dyslexia tend to have more anxiety around reading than their non-dyslexic peers and as a result, anxiety levels from the survey were noted in order to ensure that one group did not have all of the highly anxious students. In order to provide the reader with an understanding of the demographics of the sample,

demographic data on the school population was provided. Demographic data provides insight into the characteristics of the sample and allows the researcher to better understand the data collected (Terrell, 2016). In order to conduct this study, permission was obtained from the head of the school, teachers, and parents or legal guardians of students. Informed consent was obtained by providing parents and students with a letter that explained that participation was voluntary and that participants could withdraw from the study at any time (Appendix I). The purpose of the study and data collection procedures will be described, including how confidentiality of the participants will be maintained; any risks associated with participation, and expected benefits (Creswell, 2013). The signature of the parents and researcher were required. In this study, the students were placed into two groups, with four in one group and three in the other. Pre-intervention data on fluency, anxiety, and motivation was collected from all seven students. The participating teacher collected fluency data for each student using the easyCBM Lite Passage Reading Fluency Assessment (Alonzo et al., 2006). Passages were chosen based on the student's instructional reading level according to reading assessment data collected by the advisor. For the easyCBM assessment, the student read aloud an unpracticed reading passage while the teacher timed the student for one minute, recorded errors made, and then calculated the total number of words read correctly. Anxiety data was collected using the Abbreviated Reading Anxiety Questionnaire (Katzir et al., 2018). The participating teacher had each child meet in the designated intervention room individually during an assigned time to complete the questionnaire. Callback is one free period set aside each day intended for extra help, reading, and sometimes fun activities with teachers. Callback was used when possible, but in order to accommodate the students and participating teacher, Tutorial, Content, and other available time slots were utilized. The teacher read the items from the questionnaire and possible responses aloud to the student.

The students had a copy of the questionnaire and a pencil and circled their responses. Motivation data was collected using the Motivation to Read Profile–Revised Survey in which students responded to twenty multiple choice questions (Malloy et al., 2013). The participating teacher administered the survey individually to each student in the designated intervention room. The teacher followed the directions of the survey and read aloud to students as they circled their own answers on their copy of the survey. Students in the treatment group participated in a post intervention interview in which they answered semi-structured interview questions (See Appendix C). The interviews took place individually during the callback period and questions were asked by the participating teacher. The participating teacher audio recorded both the interview questions and answers; the audio data was transcribed by the researcher. The researcher read through the data, took notes, and developed codes and themes from the data. In order to ensure that data was not mishandled or lost, certain precautions were taken. Following the administration of the anxiety and motivation assessments, the researcher hand collected the questionnaires and surveys and placed them in a locked file cabinet in the designated intervention room, to which only the researcher had the key. Audio-recorded interviews were kept on a password-protected iPhone to which only the researcher had access. All computer files used numbers instead of names for identifying students. Only the researcher had access to the file cabinet where data was kept.

Intervention. Both groups of students received a one-on-one reading fluency intervention that reflected the current literacy instruction at this school. The participating teacher is certified by the state in special education. The participating teacher is a veteran teacher of special education and literacy and currently serves as a mentor to new teachers in the area of literacy instruction in the school's formal mentoring program. The teacher is also one of three

teachers at this school who participate in the Guiding Eyes Puppy Raising Program as part of the school's service learning initiative. She has experience working with students and dogs in the classroom, including for reading activities. The school prides itself on individualized, systematic, and explicit literacy instruction. For this reason, the students in the treatment group and the control group received the same fluency instruction that the school practices with the only difference being the presence of the therapy dog. The same teacher read with both the control and treatment groups throughout the course of the study to maintain instructional consistency. At some schools, several different volunteers and different dogs are brought in to read with students, and at others, the same dog is used consistently. The researcher in this study is certified by Pet Partners as a dog handler, and their dog is also certified as a Pet Partners Therapy dog with experience in their 'Read With Me' program where children read to dogs. In order to reduce the number of adults taking part in the intervention sessions, and keep the same dog throughout, the researcher provided the registered therapy dog. The intervention consisted of two 20-minute sessions per week where the students met one-on-one with the participating teacher from the school and the dog to read aloud in an empty room during times convenient to the students and the participating teacher. According to Kuhn et al. (2014), it is essential that students read aloud for 20 minutes per day. Students were provided with a selection of six books that were at their independent and instructional reading levels and chose a book that interested them for each session. According to Rasinski et al. (2017), increasing fluency requires practice reading texts that are of interest to the students and at varying levels of difficulty. For the therapy dog group, the emphasis was on reading to the dog. According to the Intermountain Therapy Animals Reading Education Assistance Dogs Manual (2013), the child should focus on reading to the dog rather than the adult. This way, the child will feel empowered and not judged. Pet Partners

suggests that the child sit next to the dog to read to them and the adult sit beside both of them. For this reason, in both groups, the child and teacher sat next to one another, not facing one another. The focus of the fluency session was on practice time on reading fluency, not on being critiqued by the adult. For this reason, the adult did not intervene beyond the Reading Protocol (Appendix D). According to Rasinski et al. (2017), in order for students to engage in wide reading and increase the volume of reading they do, they need to read real texts, not just a reading passage, and have reading be enjoyable and something they will do voluntarily. For this reason, students in both the intervention and control groups had the opportunity to choose from a selection of six books at their instructional and independent reading levels. This ability to choose texts also helps with their motivation according to self-determination theory (Deci & Ryan, 1985). During the fluency interventions, students had the opportunity to engage in repeated readings. According to Rasinski et al. (2017), when students read a text more than once, their prior practice allows their new reading to be more fluent and meaningful. The students were reminded to use their "before reading," "during reading," and "after reading" strategies. The students in this school are familiar with these strategies and were reminded to use them by the teacher who pointed to posters about these strategies. These strategies included previewing the text by examining the cover, title, and reading any blurb available; thinking aloud about the text with the dog or teacher to build background knowledge; and making a prediction as to what the student thinks the text will be about. The teacher and student looked for any new vocabulary and previewed this before beginning reading. The teacher helped the student identify new words and provided the student with a definition. During reading, students focused on their reading fluency strategies, such as scooping phrases, reading with expression, chunking words into syllables, and phrasing (Serravallo, 2015). After-reading strategies included summarizing and reflecting on the

reading (Honig et al., 2008). According to Rasinski et al. (2017), "Providing students with varied and authentic texts and purposes to practice and acquire fluency will enhance their active participation in fluency instruction and engage them in reading for multiple purposes" (p. 521). The reminders to utilize before-, during-, and after-reading strategies helped students find purpose behind their fluency practice, whether it was figuring out if their prediction was correct or reflecting on their reading. Both the treatment and the control groups followed the same protocol for reading aloud, with the treatment group having the addition of the therapy dog (See Appendix D). The therapy dog sat next to the student and the student had the opportunity to pet and interact with the dog while they were reading. The student was encouraged to read to the dog rather than to the teacher.

Throughout the intervention, both groups received regular progress monitoring of their fluency on a weekly basis. The teacher did this by taking a one-minute running record each week during the second fluency session of the week. A running record is when the student reads aloud for one minute and the teacher records miscues and the total number of words read correctly. This time series data was collected and tracked over the course of the intervention for both groups. Throughout the intervention, the researcher observed each session and took notes on the teacher's behaviors, the student's behaviors, and the dog's behaviors (See Appendix E). This information helped to provide further insight into the role of the teacher and the dog. Following the intervention, data on fluency, anxiety, and motivation was collected from both groups and compared to the pre-intervention data. Data was grouped by control group and treatment group, and pre- and post-intervention data was presented graphically for each group. Finally, students who took part in reading to the therapy dog were interviewed by the participating teacher about their experience. Interviews took place the week after the last intervention session during a

mutually convenient time for the student and the participating teacher between the hours of 11am and 2pm. These interviews took place individually in the designated intervention room. The answers to the interview questions were recorded, and provided insight into the fourth research question, how do students with dyslexia feel about their self-efficacy as readers when in the presence of a therapy dog?

Instrumentation. The quantitative research questions in this study were addressed by numerically based methods (Terrell, 2016). These included the fluency assessment and the anxiety and motivation surveys. The fluency assessment used for this study was the easyCBM Lite developed by Alonzo et al. (2006) and the University of Oregon's Behavioral Research and Teaching Department. This assessment is published and available to view online. This assessment was appropriate for the current study because it provided leveled passages of connected text for fluency assessment. This fluency assessment was used to answer the first research question, What is the impact of reading in the presence of a therapy dog on reading fluency for students with dyslexia? The independent variable was the therapy dog, and the dependent variable was reading fluency. Reading fluency was measured while the student read aloud for one minute. The fluency score was calculated by taking the total number of words read and subtracting the number of errors, equaling the total number of correct words read per minute. In order to develop the easyCBM passage forms, the researchers used a Flesch-Kincaid readability formula to assess reading passage difficulty (Anderson et al., 2014). All test forms were piloted, and an Analysis of Variance (ANOVA) was conducted to see if the mean difficulty of one test was statistically different from others. Any discrepant test forms were refined to align with others (Anderson et al., 2014). Reliability for easyCBM was examined using internal consistency, alternate form, and test retest. The Dynamic Indicator of Basic Early Literacy Skills

(DIBELS) Oral Reading Fluency (ORF) is a published standardized reading fluency assessment using one-minute measures to assess oral reading fluency rate and accuracy that was compared to the easyCBM Reading Fluency measure. There was a high level of criterion validity for the easyCBM Passage Reading Fluency measures and DIBELS Oral Reading Fluency measures with *r*, Pearson's correlation coefficient, ranging from the 0.80s to 0.90s (Lai, Alonzo, & Tindal, 2013).

The Abbreviated Reading Anxiety Questionnaire (Katzir et al., 2018) was adapted from the Abbreviated Math Anxiety Scale (Hopko, Mahadevan, Bare, & Hunt, 2003) and is used to answer the second research question, Does reading in the presence of a therapy dog decrease reading anxiety for students with dyslexia? The independent variable was the therapy dog and the dependent variable was reading anxiety. Reading anxiety was determined using a questionnaire that utilized a Likert scale. There were nine situations described and five responses for students to choose from. Students were asked to indicate how worried they felt during various reading situations. For example, *Indicate how worried you feel when you need to read a page with a lot of words without drawings*. The student could choose from *not at all*, *rarely, often*, *sometimes*, and *always*. The score was then determined by adding up the values attributed to each answer selection. The Abbreviated Reading Anxiety scale was used in a prior study with 115 second-grade students. Cronbach's alpha was equal to 0.83, indicating good internal consistency among the items. Correlation tables provided limited evidence on construct validity. Reading anxiety was negatively correlated with self-concept at -0.58. The most anxious students had the lowest reading self-concept. Reading anxiety was weakly negatively correlated with rapid automatized naming, phonological awareness, and working memory. Permission to use the Abbreviated Reading Anxiety Scale was obtained from Katzir et al. (2018) (See Appendix F).

The Motivation to Reading Profile Revised was used to answer the third research question, Does reading in the presence of a therapy dog increase reading motivation for students with dyslexia? This question was answered using a survey consisting of 20 questions with multiple-choice answers. For example, *When I read aloud I am a (1) poor reader, (2) okay reader, (3) good reader, or (4) very good reader.* In order to increase reliability of the student responses, items are variably scored and are listed from least motivated to most motivated and others the opposite (Malloy et al., 2013). Reliability and validity for the Motivation to Read Profile Revised was determined through field-testing. The reading survey was administered to students in three schools across the mid-Atlantic and Southern portions of the United States. The survey was administered to 118 third-graders, 104 fourth-graders, and 54 fifth-graders, resulting in 281 students total. Reliability and validity testing of the scores was conducted using MPlus software. Reliability using Cronbach's alpha showed alpha=0.87 for the full scale and alpha=0.81 for the self-concept scale. A non-parametric analysis was used to determine the validity using a root mean square error of approximation. The root mean square error was 0.089 with a confidence interval of 0.081-0.098. The probability of root mean square error being $\leq$ = 0.05 was 0.000 (Malloy et al., 2013). Reliability and validity estimates are within the acceptable ranges for classroom and research needs (Malloy et al., 2013).

Data analysis plan. To address research question 1—Does reading aloud in the presence of a therapy dog improve reading fluency for students with dyslexia as measured by the easyCBM Passage Reading Fluency Assessment?—the following hypothesis was tested: Reading fluency scores will increase from pre- to post-assessment. Parametric tests such as mixed factorial ANOVA and t-tests are limited in their use because of the small sample. As previously stated, the a priori power analysis indicated that N=24 participants would be needed

for a factorial design, which exceeds the available sample (N=7). Additionally, the study sample did not include enough participants to meet the statistical assumptions of most parametric tests. For example, the Central Limit Theorem, which shows that the larger the sample, the closer the sampling distribution comes to being a normal distribution, cannot be applied with this small sample size (Szafran, 2012). Results were analyzed and presented using graphical analysis and percent change from pre- to post-intervention. To improve clarity of the participant's response to the intervention, reading fluency was assessed weekly and plotted on a line graph for each student individually.

To address research question 2, the following hypothesis was tested: Reading anxiety will decrease from pre- to post-test. Percent change in anxiety levels was reported graphically.

To address research question 3, the following hypothesis was tested: Motivation to read will increase pre- to post-test. Percent change in reading motivation was reported graphically.

The last research question—how do students with dyslexia feel about their self efficacy as readers when in the presence of a therapy dog?—was answered through semi-structured interview questions. The interview questions were researcher-created and based on literature around interviewing children. According to Kyronlampi-Kylmanen & Maatta (2011), it is important that interview questions are child-centered, clear, and that the entire interview process is short. The interview data was audio recorded and transcribed. The audio recording of the interviews is important because sometimes children can be eager to share their experiences and can go off on tangents and be challenging to follow (Kyronlampi-Kylmanen and Maatta, 2011). Data was organized into files and read by the researcher. During this process, codes were formed and themes developed (Creswell, 2015). Initially, five or six categories were created; they were then expanded as suggested by Creswell (2015). Although some predetermined codes were used,

including “nervous,” “calm,” “comfortable,” “listens,” and “excited,” the researcher added codes as they emerged through the data analysis. The researcher also looked for larger themes among the codes to form an understanding of the data. The data was presented in narrative form in addition to tables and figures to create an in-depth understanding of the context (Creswell, 2013). Interview data was analyzed using NVIVO Software (QSR International, 2018). Safeguards to reduce the risk of subjects being identified are discussed in the Ethical Procedures section below.

Threats to internal validity. There were threats to internal validity that needed to be considered. The first was history, in which events can take place that impact the outcome of the study. In this case, some students in the sample were from different classrooms. It was impossible to know how much instructional time individual teachers devoted to fluency instruction or student anxiety. As a result, time that individual teachers devoted to reading instruction could have impacted the outcomes of the study. However, throughout the course of the school year administrators regularly observe classroom teachers to monitor for instructional consistency among all classrooms. Another threat to internal validity was regression to the mean, in which students who started very low in reading abilities, for example, would likely show improvement. In this study, students in both groups were struggling readers and pre-test data was used to ensure that there were no extreme discrepancies in reading levels among the students. Another threat to internal validity that can occur when using questionnaires is social desirability, in which the participant tries to determine the answers that the researcher wants. In the case of the Motivation to Read Provide Revised (Malloy et al., 2013), the researchers protected for this by reversing the order of the scaled scores for certain questions. Finally, selection is another threat to internal validity, in which participants with certain characteristics may cause specific outcomes (Creswell, 2014). Using a comparison group helped to protect for selection.

Additionally, it was important to be aware of unintended consequences. The participating teacher checked in with the student following each session and asked the child how the session went. It was important to ensure that nothing happened in the session that upset the child that could impact the results of the study.

Threats to external validity. One threat to external validity is the interaction of the selection and treatment. According to Creswell (2014), the specific characteristics of the students in the sample make it difficult to generalize to other populations. For example, the students in this study had dyslexia, and therefore the researcher could not generalize results to other struggling readers. Even though the current study had a small sample size and dealt with a specific population of students, it has high ecological validity because it took place in a real-world setting (Shadish, Cook, & Campbell, 2002). The conditions of this study were very similar to those using therapy dogs for reading interventions in other settings.

For the qualitative portion of the study in which interviews help answer the research question related to the ways, if any, that the presence of a therapy dog influences how students with dyslexia feel about their self-efficacy as readers, there are potential threats to validity that were addressed. For example, reactivity, or the influence of the researcher on the participants, was important to consider. Maxwell (2013) points out that it is impossible to eliminate the influence of the researcher; instead, it is important to understand the ways in which the researcher influences the participants.

Rich data is another important component of qualitative research (Creswell, 2014; Maxwell, 2013). Providing interview data that is detailed and varied helps provide a clear picture of the experiences of the participants (Maxwell, 2013). For this reason, audio data from the interviews was transcribed verbatim in order to capture details. Thick description has the ability

to provide details that paint a clear picture for the reader of the research and allow them to understand contexts in which the data could be applied (Terrell, 2016). For this reason, thick description of the particular setting for this school was used. In order to ensure that answers to interview questions were interpreted correctly, member checks were used, in which the researcher solicited feedback from the participants on data they provided during the interviews (Maxwell, 2013). Additional measures to ensure trustworthiness of the data included the triangulation of data by looking at the quantitative data and qualitative data together to see if themes developed (Creswell, 2014). In addition, the researcher presented any evidence contradictory to the study's themes, as this provided a clearer picture of the study and added to the validity of the information (Creswell, 2014).

Ethical Procedures

The objective of the current study was to examine the impact of a therapy dog on reading fluency, anxiety, and motivation among students with dyslexia. Before starting data collection, the researcher followed procedures to ensure the study was carried out according to the standards set forth by the University of Bridgeport and the Institutional Review Board (IRB). The researcher completed the Collaborative IRB Training Initiative (CITI) training (See Appendix G) and applied to the institutional review board prior to the start of the study.

Prior to collecting data from the school site, the researcher obtained permission for the study from the head of school (See Appendix H). School leaders were provided with a letter that explained the duration of the study, potential impact, and outcomes of the research (Creswell, 2014). Additionally, permission from parents and signed informed consent forms were required (See Appendix I). Parents were provided with a letter that explained the purpose of the study,

and parents and students were informed that participation was voluntary and that they could choose to exit the study at any time. Additionally, a signed letter from the participating teacher indicated that they agreed to administer the assessments and interviews for the quantitative and qualitative portions of the study, and agreed to hand the data to the researcher following administration (Appendix J). Only a registered Pet Partners therapy dog was used for this study (Appendix K) and documentation indicating confidentiality from Pet Partners was provided to participants in the study (Appendix L). Throughout the course of the study, the researcher was respectful of the school site and avoided being disruptive (Creswell, 2014). To do so, the intervention took place during "callback," a time where students have the opportunity to seek extra help from teachers, and therefore a time that was utilized without disrupting their normal instructional time. Additional time slots were needed and included Tutorial and Content periods when mutually convenient for the teacher and students. It was important to develop trust between the researcher and the school site by being clear about potential disruptions (Creswell, 2014). According to Creswell (2014) and Terrell (2016), it is important that the participants benefit from the research. For this reason, the students selected needed extra support in reading fluency and received fluency instruction whether they were in the control group or the treatment group. Fluency data was tracked for both groups, which provided beneficial information for teachers and students. In order to respect potential power imbalances, the participating teacher was someone with whom students were familiar. This teacher conducted the interviews in order to reduce the stress that an interview with the researcher could cause for students. To respect the dignity of participants, the researcher protected their identities by assigning data numbers instead of using student names. Quantitative fluency, anxiety, and motivation data was stored in computer files accessible only to the researcher. Qualitative interview data was stored in

computer files accessible only to the researcher. Additional paper running records, surveys, and notes were kept in a locked file accessible only to the researcher. Data and copies of the reports will be shared with stakeholders, such as school leadership and teachers. Raw data will be kept for five years following the study and then discarded (Creswell, 2014). The data will be used to help educators at this site to inform their future reading instruction and their future use of therapy dogs in their school setting. The intent is to provide educators with data that they can use to inform their future work with students and therapy dogs. In providing data that is useful to educators, it is essential to report honestly and provide all findings, positive or negative. According to Creswell (2014), good qualitative research reports on a variety of perspectives. In order to ensure this, interviews were recorded, and all data was analyzed.

Summary

In this chapter, the researcher presented the methodology utilized in conducting this case study. In this study, seven students diagnosed with dyslexia were split into two groups to take part in a reading fluency intervention. The students received the same fluency intervention, but the treatment group had the addition of a therapy dog present for the intervention. Pre- and post-intervention data was collected on fluency, anxiety, and motivation. Ongoing weekly fluency data was collected for both groups. Qualitative interviews on feelings of self-efficacy around reading were obtained from participants in the treatment group. Chapter 4 will include the results of the proposed study.

CHAPTER 4: RESULTS

Introduction

As stated in Chapter 1, this study examines the challenges that students with dyslexia face with respect to reading fluency, anxiety, and motivation. The purpose of this study is to examine the effect of a therapy dog assisted reading intervention on reading fluency, anxiety, and motivation among third-grade students with dyslexia. The general problem addressed by the study is that students with dyslexia need social and emotional support, in addition to academic support, to deal with the anxiety and motivation problems they often face while reading. For struggling readers, finding pleasure in reading can be a challenge. However, we know that teaching reading should not only be about teaching a skill but also about showing students that reading can be enjoyable (Murphy, 2012). This particular school used therapy dogs as a part of service learning, reading, and other capacities on campus but never collected any data on the practice. Teachers at this school already implement research based, systematic, and multisensory reading instruction for students with dyslexia. Teachers are also encouraged to use tools to help students mitigate their anxiety and challenges around motivation so that reading fluency and other skills can be improved. One intervention that has shown the potential to reach struggling readers is animal assisted therapy (Jalongo, Astorino, and Bomboy, 2004). In this study, students with dyslexia took part in a fluency intervention in which some students had a therapy dog present ($n = 4$) and some did not ($n = 3$). More information on the use of therapy dogs could provide schools with valuable information on how to improve literacy related therapy dog programs. This study provides important information on how students with dyslexia react to a

therapy dog, particularly because these students not only struggle with the skill of reading but also the social and emotional struggles of reading challenges (Mammarella et al., 2014).

The current study was guided by four research questions regarding the use of therapy dogs for third grade students with dyslexia.

The research questions are:

1) Does reading aloud in the presence of a therapy dog improve reading fluency for students with dyslexia as indicated by the easyCBM Passage Reading Fluency Assessment? (Alonzo, Tindal, Ulmer, & Glasgow, 2006)

2) Does reading in the presence of a therapy dog decrease reading anxiety for students with dyslexia as indicated by the Abbreviated Reading Anxiety Questionnaire? (Katzir, 2018)

3) Does reading in the presence of a therapy dog increase reading motivation for students with dyslexia as indicated by the Motivation to Read Profile? (Malloy et al., 2013).

4) How do students with dyslexia feel about their self-efficacy as readers when in the presence of a therapy dog as indicated by responses to interview questions?

It is important to investigate the use of therapy dogs among students with dyslexia because many schools have therapy dog programs, yet very little data is being collected. Pet Partners, the largest therapy animal organization in the U.S., provides over 3 million visits to recipients annually, including students ("Pet Partners About Us", 2019). We know how valuable research based, systematic literacy instruction is for students with dyslexia, so it is important to know the value of additional tools such as therapy dog programs that require both time and resources.

This chapter is organized in terms of the research questions posed in Chapter 1. It first reports pre and post intervention fluency rates for both groups using the easyCBM Passage Reading Fluency Assessment. Then, it reports the weekly fluency rates from informal running records using the texts on the student's instructional reading level. Next, it reports student's scores on the Abbreviated Reading Anxiety Scale pre and post intervention and the Motivation to Read Profile pre and post intervention. Finally, student responses from interviews of those in the dog group are reported and additional relevant information from session observations are shared.

Research Setting

The independent school referenced in this study serves students ranging in age from 5–15 years old with language-based learning differences. Set on a bucolic suburban campus in the Atlantic Corridor of the United States, students are educated in academics, athletics, the arts, and community service. There are 260 students attending the school, and 75 teaching faculty with a student to teacher ratio from 1:1 to 12:1. The school is accredited by the State of Connecticut Department of Education, the Connecticut Association of Independent Schools, and the National Association of Independent Schools. The National Association of Special Education Teachers has selected this school as a school of excellence eight years in a row. The school offers a language based remedial program for students with language-based learning differences. The curriculum is individualized to meet the specific needs of each student; no single remedial program is followed, and everything is customized and implemented as needed. Teachers also create many of their own materials that help them to implement explicit, cumulative, and multisensory reading instruction. Teachers are encouraged to use a variety of resources and their own reading instruction expertise to meet the individual needs of each student. Each faculty

member at this school has a teaching certification in special education and/or literacy. This school was chosen for the study because it specifically serves students with language based learning disabilities using research-based techniques. This school has also used therapy dogs for reading and service learning but has not previously collected data on the practice. While the school administration and faculty have expressed anecdotal evidence in support of therapy dogs, data was needed to provide empirical evidence on the practice. School day hours are extremely valuable, and it is important to know they are being spent wisely, and in what ways, if any, the practice of using therapy dogs as a part of the curriculum can be improved. Therefore, it is essential to provide systematic evidence that the therapy dog reading intervention is effective for this school and may provide an important target for intervention to other schools as well.

As a former teacher at this school the researcher was aware of the strong literacy instruction that is customized for students with language based learning disabilities through explicit and systematic research based teaching techniques. The researcher had also heard anecdotal accounts of students having positive experiences with dogs on campus. The head of school shared that students and teachers alike love working with dogs on campus but that they would welcome the collection of data for evidence that therapy dogs are systematically effective. One previously reluctant reader reported to his teacher that after reading to the visiting Guiding Eyes puppies on campus, he now reads to his own dog every night.

To address researcher bias, a current teacher collected both quantitative and qualitative data instead of the researcher. Mixed methods research helps to combat researcher bias because it allows for the comparison of different perspectives drawn from the quantitative and qualitative data (Creswell, 2014).

Demographics

According to current school admissions data, for the 2018-2019 school year, there are 265 students including 79 females (30%) and 186 males (70%). There are 49 non-white students (18%; 19 females, 30 males), and 17 international students (6%; 1 female, 16 males). The participants in this study included 7 students in total. There were 5 males and 2 females in the study, all in third grade. The dog group consisted of 4 students, including 3 males and 1 female, and the non-dog group consisted of 3 students, including 2 males and 1 female. According to the school's reading assessment data at the start of the study, all participants read on the second grade level with the exception of two students who were reading at the first grade level. The small sample size of 7 students was due to some of the challenges associated with recruiting children for a research study during school day hours. The inclusion criteria for the study was specific in order to provide valuable information on students with dyslexia in the third grade. Logistical challenges such as class schedules, availability of space, and availability of the teacher who helped collect data had an impact on the number of students who could participate in the study. Many researchers purposely exclude some populations such as children from studies because of the challenges they pose; however, this results in a lack of empirical research on certain groups of people (Moore and Miller, 1999). It was important to gather information on children with dyslexia even though it can be a challenge to find students who fit the inclusion criteria and logistically fit the research schedule. Finding students who fit the inclusion criteria and were also available when the participating teacher was available was challenging. Conducting a study in a school requires the cooperation and flexibility of the researcher, the administration, teachers, and students. In this study, a small sample size allowed the researcher to focus on a specific group of students within this school. According to Smith and Little (2018) in

data rich environments where the individual can be studied, small-*N* studies have enormous power because information on each individual is provided. As Smith and Little (2018) point out, students are not homogenous so understanding each individual in a small-N study provides important information to the reader. In addition, the quantitative data on participants is presented individually to allow the reader to examine the data distribution of each individual participant (Weissgerber, Milic, Winham, and Garovic, 2015). Thus, the quantitative data is followed by qualitative data and rich descriptions that help present a clear picture of the experiences of each individual student involved in the study (Creswell, 2014). The following section will provide more information on how the researcher arrived at the final sample size.

Data Collection

The researcher provided the school site with the inclusion criteria for the study. The school reviewed student files and provided the researcher with twelve students who fit the inclusion criteria. The inclusion criteria consisted of students who are in third grade with documentation of dyslexia who read at least one, but no more than three levels below their grade level, and were comfortable with dogs. During the week of April 22, 2019, the school sent an e-mail message to parents with a letter from the researcher inviting eligible students to participate in the study (Appendix I). Of the twelve families that met the inclusion criteria, seven responded that they would like to have their child participate. Informed consent documents were provided to those parents with contact information inviting them to reach out with any questions or to discuss the study (Appendix I). One hundred percent of the students who agreed to participate in the study followed through to the end of the study. There were no qualitative differences in the families that agreed to participate in the study versus those that did not. According to the advisor

who initially reached out to the families, some indicated that their child did not like dogs despite the advisor thinking otherwise. The advisor thought others were busy with multiple children in the family and forgot to respond. No one responded that they did not want to participate, they just did not respond at all. A student advisor, in conjunction with classroom teachers, divided the students into the dog group and the non-dog group based on class schedules, resulting in a convenience sample for the study. The advisor also worked with classroom teachers to schedule students so that they would have two twenty-minute fluency sessions per week. Instead of meeting solely during Callback time as indicated in the proposal, students also met for fluency sessions during Juice Break, Tutorial Class, and Content. When scheduling students for the intervention, the advisor realized it would be necessary to utilize other parts of the day in order to make sure all students could be seen twice per week for twenty minutes. Data collection began the week of April 25 and continued through June 14. The participating classroom teacher who administered the assessment and provided the fluency intervention signed a letter indicating her cooperation prior to the start of the study (Appendix J).

All participating students met with the teacher and the researcher in a quiet space the size of a small classroom in the main building of the school. The space had a large bench for students to sit and an area where the six books available for the student to read were displayed. There was also a comfortable carpet where students could choose to sit on the ground to read if they preferred. Additionally, colorful visuals on *before, during, and after* reading strategies were displayed on the walls for students to reference. The same space was used for each session. Initially, the students were picked up from their classrooms for each session, but over time, they came to the sessions without the assistance of a teacher.

All participants were administered the easyCBM Passage Reading Fluency assessment pre and post fluency intervention. Additionally, a weekly one minute informal running record was conducted throughout the course of the study using an instructional level text the student was already reading during the session. A running record allows the teacher to take specific notes on an individual student's reading. It allows them to focus on their reading process such as how they approach unknown words, which words give them decoding difficulty, and other aspects of their reading rate and fluency. In determining appropriate progress monitoring measures for the easyCBM, University of Oregon suggests finding one in which the student's score falls between the 10th and 50th percentile range (Alonzo et al, 2006). This is the range that the measures will be most sensitive to detecting growth. This means that it is necessary to move up or down a reading passage level if the student scores outside of this range. If the student's score is above the 50th percentile the teacher knows that passage reading fluency at this particular grade level is not an issue. However, if their score falls between the 10th and 50th percentile, the teacher knows that the student needs fluency support at this level. According to the easyCBM User Manual, if the student's score falls below the 10th percentile, the teacher knows that there may be a skill deficit such as word reading or letter sounds (Alonzo et al., 2006).

All participants were administered the Abbreviated Reading Anxiety Questionnaire pre and post intervention and the Motivation to Read Profile pre and post intervention. For consistency, the participating teacher followed the administration directions on each measure exactly as described in the directions for each student. Students in the dog group participated in post intervention interviews with the participating teacher. For consistency, all interviews followed a prescribed protocol (Appendix C). All interviews were audio recorded by the researcher using the Rev Recorder application on a smartphone. Each interview was transcribed

using the same application and the researcher also listened to recordings and read the transcriptions to ensure the transcript was accurate. The researcher did not experience any unusual circumstances in the data collection interview process. The interviews took place with minimal distractions. This meant that students were interviewed in the quiet space where their reading interventions took place so that other students and teachers would not interrupt. All of the assessments used have been validated and confirmed to be developmentally and diagnostically appropriate for this sample as indicated in the Instrumentation section in Chapter 3.

Data Analysis

The researcher organized all of the student data in a binder with folder dividers labeled with each student identification number so that names were removed from the data. Inside each folder the researcher collected pre and post intervention data and observational notes from each session. The binder was kept in a locked file drawer. Reading fluency was measured using the easyCBM Passage Reading Fluency assessment. In selecting a measure for progress monitoring easyCBM Passage Reading assessment recommends finding a level at which the student falls between the 10th and 50th percentile ranking range. At this range, the measure will be most sensitive to growth (Alonzo et al., 2006). If the student scores above the 50th percentile, the teacher knows this particular skill is not an issue. The grade level range of the initial easyCBM passage reading fluency assessments ranged from levels 1.1 to 3.1, one grade level below the schools reported current reading level, and one grade level above for the students. For example, student 2 was presenting with some anxiety around reading aloud, so the teacher decided to move down one level for the initial assessment. As a result, the student scored above the

percentile ranking indicating a need for intervention at that level, so the teacher then moved up a grade level to find a more appropriate percentile rank starting point for the student.

Study Results

The four research questions and hypotheses that guided this study were as follows:

RQ1: Does reading aloud in the presence of a therapy dog improve reading fluency for students with dyslexia?

H1: Reading fluency scores will increase from pre- to post-assessment

H0: There will be no increase in reading fluency scores from pre- to post-assessment

RQ2: Does reading in the presence of a therapy dog decrease reading anxiety for students with dyslexia?

H1: Reading anxiety scores will decrease from pre- to post-assessment

H0: There will be no decrease in reading anxiety scores from pre- to post-assessment.

RQ3: Does reading in the presence of a therapy dog increase reading motivation for students with dyslexia?

H1: Motivation to read scores will increase from pre- to post-assessment.

H0: There will be no increase in motivation to read scores from pre- to post-assessment.

RQ4: How do students with dyslexia feel about their self-efficacy as readers when in the presence of a therapy dog?

Research question 1 examines reading fluency growth for students in this study. According to the easyCBM User Manual, students show fluency growth every two weeks because fluency takes longer to develop than other reading skills (Alonzo et al., 2006).

Hasbrouck and Tindal (2017) provide words correct per minute oral reading fluency norms in Table 1 below. The national fluency norms are used to determine the percentile in which a student scores which will determine whether or not they require fluency intervention.

Table 1

Hasbrouck & Tindal Words Correct Per Minute Oral Reading Fluency Norms for the Fall, Winter, and Spring Semesters

Grade	Percentile	Fall	Winter	Spring
2	90	111	131	148
2	75	84	109	124
2	50	50	84	100
2	25	36	59	72
2	10	23	35	43
3	90	134	161	166
3	75	104	137	139
3	50	83	97	112
3	25	59	79	91
3	10	40	62	63

From Hasbrouck, J. & Tindal, G. (2017). An update to compiled ORF norms (Technical Report No. 1702). Eugene, OR. Behavioral Research and Teaching, University of Oregon. Printed with permission from University of Oregon.

In displaying and analyzing student data for a small sample size (*N*=7 students), it was important to include each data point to provide as much information as possible to the reader as, "The best option for small datasets is to show the full data, as summary statistics are only meaningful if there are enough data to summarize" (Weissgerber, Milic, Winham, & Garovic, 2015). A power analysis was conducted to determine an appropriate sample size using GPower;

it determined that an appropriate sample size would be 24 students. As a result, each data point (one for each student) is included in the following tables and figures because of the small sample size of N=7.

As shown in Table 2, students began the study at either a first or second grade reading level. These levels fell within the inclusion criteria of all students reading at least one but no more than three levels below the third grade reading level. Specifically, 5 students (71%) started the study reading at a second grade reading level, and 2 students (29%) started the study reading at a first grade reading level. This information helped the researcher to understand at which grade level to begin reading fluency assessments for each student.

Table 2

Student Reading Levels Pre Intervention According to School Assessment Data

Student ID	**Reading Level**
1	2
2	2
3	2
4	1
5	2
6	1
7	2

RQ1: Does reading aloud in the presence of a therapy dog improve reading fluency for students with dyslexia?

All students in the study had their word reading fluency measured using the easyCBM Passage Reading Fluency assessment. The students read aloud from a leveled passage for one minute and the teacher recorded errors. The reading fluency score is based on the words read correctly in one minute. Table 3 and Figure 1 display data in response to RQ1. As shown in Table 3, three of the students in the dog group showed percentile increases from pre-to post-assessment on the second grade reading level passage. Student ID 7 scored above the 50th percentile on the second grade assessment so s/he was moved up to the third grade assessment and did not show any change in percentile from pre- to post- test. One student in the non-dog

group had a decrease in percentile from pre- to post- test. Student ID 5 had a percentile increase from the 44th percentile to the 51st percentile. Student ID 6 scored in the 4th percentile when administered the passage reading fluency assessment at the second grade level. Per the easyCBM instruction manual, this student was moved to the Word Reading Fluency Assessment and scored at the 7th percentile on the pre intervention assessment and the 12th percentile on the post intervention assessment.

Table 3

easyCBM Passage Reading Fluency Pre and Post Intervention Scores

ID	WRF Level 1 Raw	Percentile	Passage Level 1 Raw	Percentile	Passage Level 2 raw	Percentile	Passage Level 3 Raw	Percentile	Percent Change
1 Pre*					47	12			95.7%
1 Post*					92	41			
2 Pre*			71	76	41	10			14.6%
2 Post*					47	12			
3 Pre*					87	37			74.7%
3 Post*					152	89			
7 Pre*					73	98	72	13	1.4%
7 Post*							73	13	
4 Pre			57	67	58	17			-8.6%
4 Post					53	14			
5 Pre					95	44			8.9%
5 Post					103	51			
6 Pre	16	10							
6 Post	21	12	9	4					31.2%

Note. * Indicates dog group. In cases where students scored above the 50th percentile, they were then moved up to the next passage level until their score fell between the 10th and 50th percentile at the higher level. Student ID 6 was moved down to Word Reading Fluency because s/he scored below the 10th percentile in Passage Reading Fluency. Percent change is positive unless indicated by (-) sign.

The bar graph below in Figure 1 displays individual student fluency scores pre and post intervention on the easyCBM Fluency assessment. As is displayed, all students in the dog group scored higher on fluency measures post intervention. All students in the non-therapy dog group also improved their fluency scores with the exception of Student 4 who had lower fluency scores post intervention.

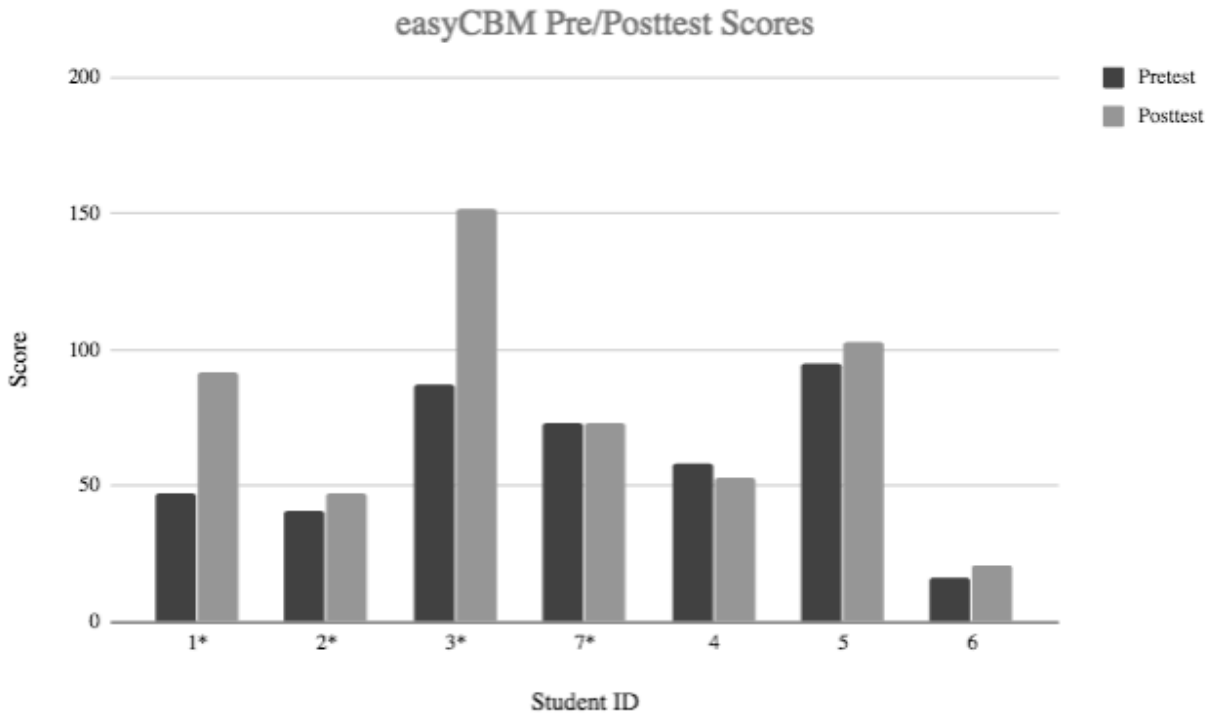

Figure 4: easyCBM Passage Reading Fluency Assessment Pre-to-Post Intervention Scores
Note. *=Students in the Dog Group

An informal running record examining reading behaviors and words read correctly per minute was administered to each student once per week. These running records occurred during the second session during the week. The informal running records were administered using the grade level text the student chose to read for that day's session. As shown in Table 4 and Figure 5, students in both groups showed increases in Words Correct Per Minute (WCPM) from week 1

to week 7. However, week-to-week fluency varied in that it sometimes increased and sometimes decreased. Part of the fluctuation is due to the variety of texts used for informal running records. Although students were provided with texts that were on their reading level, they are not standardized because they are books rather than standardized fluency passages. This variation in texts may have contributed to the fluctuations in reading fluency week to week. Weekly informal records were important for the teacher to be able to note any specific fluency challenges the student was facing such as a certain decoding pattern, or difficulty with reading dialogue for example. These additional notes on fluency provided the teacher with additional insight into the student's reading process. According to the easyCBM Teacher's Manual, passage reading fluency takes longer to show growth than other reading skills (Alonzo et al., 2006). However, informal one-minute running records using current texts provide valuable progress monitoring and detailed data on a child's reading process. Dr. Marie Clay developed running records because of the insight they provide into a student's reading behaviors in addition to words read correctly (Clay, 2001). Weekly informal running records provided the teacher with valuable reading observations so that she could adjust her instruction to meet the needs of each student.

Table 4

Weekly Informal Running Record Words Read Correctly Per Minute

ID	**WCPM Wk. 1**	**WCPM Wk. 2**	**WCPM Wk. 3**	**WCPM Wk. 4**	**WCPM Wk. 5**	**WCPM Wk. 6**	**WCPM Wk. 7**	**Percent change Positive Growth from Wk. 1-7**
1*	90	88	95	89	96	85	95	5.6%
2*	41	50	40	47	60	45	44	7.3%
3*	99	112	145	153	120	155	151	52.5%
7*	98	110	107	110	97	108	121	23.5%
4	53	57	75	60	50	65	70	32.1%
5	103	112	136	115	120	109	111	7.8%
6	8	10	9	7	15	10	15	87.5%

Note. * Indicates students in the Dog Group. WCPM = Words correct per minute, Wk. = Week Students in both groups showed positive percent change in fluency from pre- to post- assessment with the largest percent change shown by Student 6 in the non-therapy dog group. However, this student was an outlier with only 8 WCPM on the pretest. This starting score was significantly lower than other students as is shown in Table 4 above.

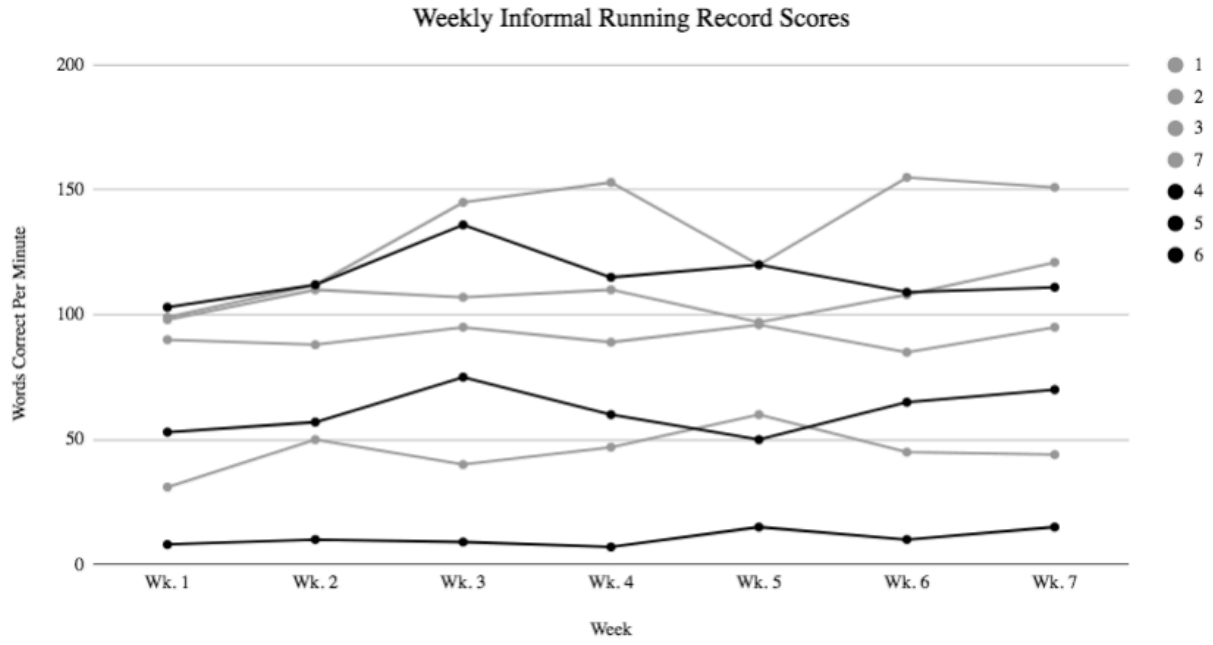

Figure 5. Individual WCPM Weekly Fluency Scores
Note. Grey is dog group. Black is non-dog group.

RQ2: Does reading in the presence of a therapy dog decrease reading anxiety for students with dyslexia? As portrayed in Table 5, three of the students in the dog group showed decreases in anxiety from pre- to post- test, and one stayed the same. One student in the non-dog group showed a decrease in anxiety, one stayed the same, and one increased. Figure 3 displays pre and post intervention anxiety levels for each group based on scores on the Abbreviated Reading Anxiety Questionnaire.

Table 5

Abbreviated Reading Anxiety Questionnaire Scores and Percent Change Pre-to-Post Intervention

ID	Pretest	Posttest	Percent Change
1*	20	11	-45.0%
2*	19	9	-52.6%
3*	16	12	-25.0%
7*	13	13	0.0%
4	11	10	-9.1%
5	9	9	0.0%
6	22	24	9.1%

Note. *Indicates dog group. The lowest possible score is a 9 indicating low anxiety, and the highest score is a 45 indicating high anxiety. A negative percent change shows a decrease in anxiety, and a positive percent change shows an increase in anxiety. All of the students in the therapy dog group, with the exception of Student 7, showed dramatic decreases in anxiety according to the Abbreviated Reading Anxiety Questionnaire (Katzir, 2018).

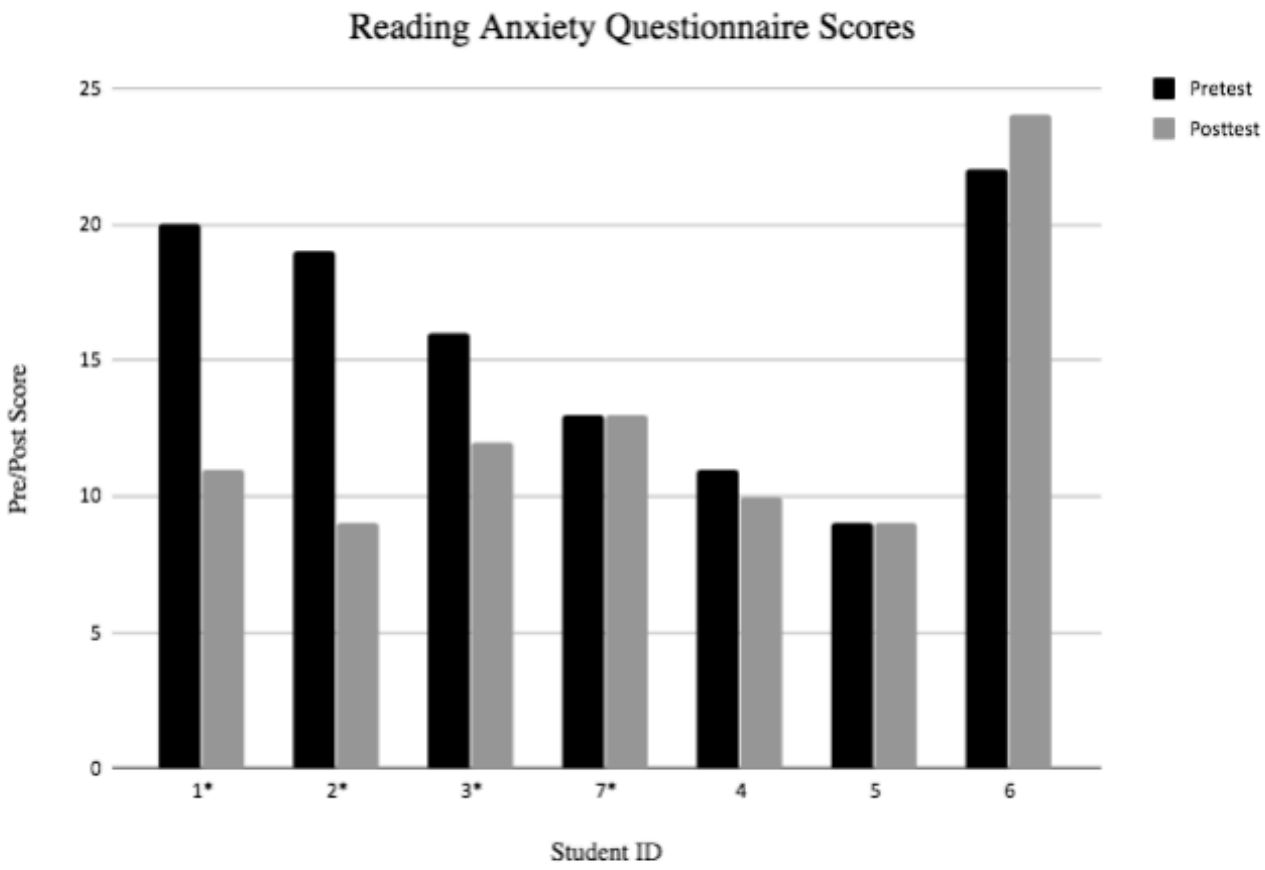

Figure 6. Abbreviated Reading Anxiety Questionnaire Pre-to-Post Scores for Individual Students
Note. *=Dog Group

RQ3: Does reading in the presence of a registered therapy dog increase reading motivation for students with dyslexia? As shown in Table 6, 100% of the students in the dog group indicated an increase in total reading motivation from pre- to post- test. Two students in the non-dog group showed an increase, and one showed no increase. 100% of students in the dog group indicated an increase in their self-concept as readers. Two of the students in the non-dog group indicated an increase in their self-concept as readers from pre- to post- test and one remained the same. Three of the students in the dog group indicated an increase in the value of reading and one indicated a decrease. Two of the students in the non-dog group indicated a decrease in the value of reading and one indicated an increase from pre- to post- test. Student ID 2 in the dog group showed an increase of 9 points on the value of reading. Figure 4 displays student scores for each measure pre-to-post test graphically. As pictured in Figure 5, the greatest percent changes in total motivation scores from pre- to post- test were in the dog group

Table 6

Motivation to Read Profile Scores and Percent Change

Student ID	**Self Concept Total**	**Value Total**	**Motivation Total**	**Percent Change Positive Growth**
1 Pre*	25	23	48	
1 Post*	26	24	50	4.2%
2 Pre*	23	24	47	
2 Post*	25	33	58	23.4%
3 Pre*	27	26	53	
3 Post*	36	29	65	22.6%
7 Pre*	25	27	52	
7 Post*	33	23	56	7.7%
4 Pre	28	28	56	
4 Post	30	26	56	0%
5 Pre	27	38	65	
5 Post	37	29	66	1.5%
6 Pre	21	17	38	
6 Post	21	19	40	5.3%

Note. * Indicates dog group

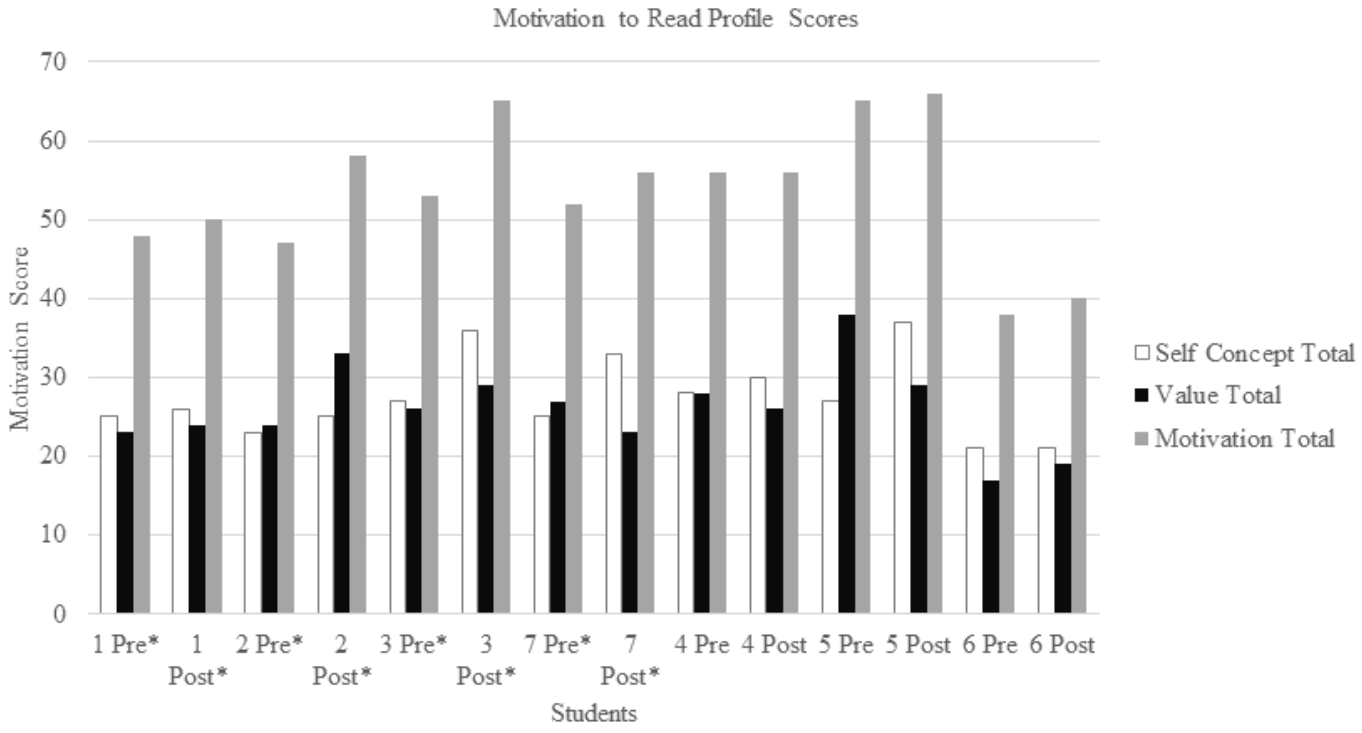

Figure 7: Motivation to Read Profile Scores by Self Concept, Value, and Total
Note. *=Dog Group

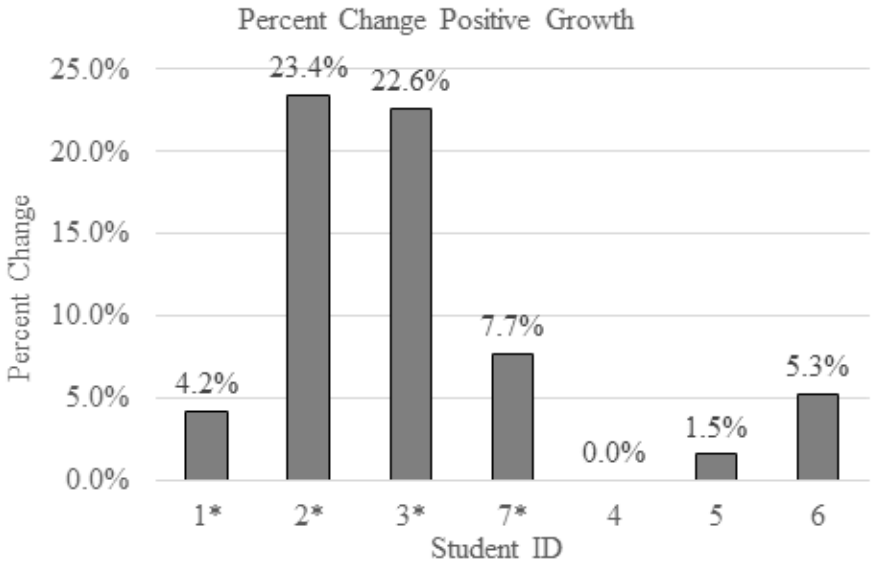

Figure 8: Motivation to Read Profile Pre-to-Post Intervention Percent Change

Note. *Indicates dog group

The pragmatic worldview allows us to navigate the ebbing and flowing emotional currents that accompany reading struggles through the use of a sequential mixed methods study which obtains both quantitative data about fluency and anxiety and qualitative data about students' experiences and feelings. The following qualitative interview data provides information in response to the question: How do students with dyslexia feel about their self-efficacy as readers when in the presence of a therapy dog? All interviews followed a prescribed protocol (Appendix C). The four students in the therapy dog group participated in one to one post intervention interviews with the participating teacher asking the questions, the therapy dog present, and the researcher observing. Table 7 provides a description of each interview conducted with the 4 participants in the dog group.

Table 7

Interview Schedule for Dog Group

Identifier	Date	Time	Duration in Minutes
2	6/13/19	12:30pm	4 minutes 30 seconds
3	6/13/19	12:54pm	3 minutes 42 seconds
7	6/13/19	1:15pm	5 minutes 21 seconds
1	6/13/19	1:36pm	4 minutes 10 seconds

Note. Listed in the order in which they were interviewed.

All interview data was audio recorded and transcribed using the iPhone application Rev. Qualitative data analysis consists of preparing and organizing the data (Creswell, 2013) which in this case meant first transcribing the interviews. After transcription, the researcher listened to the interview audio recordings to check for the accuracy of the transcription. All of the interview transcripts were kept on a password-protected computer. During each interview the teacher provided students with sufficient wait time so that they could process each question. The researcher took notice of how the students interacted with the dog during the interview process and took observational notes on the student's behavior. The researcher also reviewed observational notes taken during interviews and fluency sessions in order to hone in on key concepts. The researcher developed predetermined codes, which included, "calm," "comfortable," "listens," and "excited". Forming codes allows the researcher to build detailed descriptions and develop themes (Creswell, 2013). Despite having predetermined codes, the researcher was cognizant of additional codes which may emerge during the data analysis process. After carefully checking the transcripts for codes, themes were developed. According to Creswell (2013), themes are broad units of information that consist of several codes combined to form a common idea. Identification numbers were used to protect the identities of students who were interviewed. When reviewing the transcriptions of student responses, themes arose. Table 8 displays the themes of decreased anxiety, reading enjoyment, improved confidence in reading, and improved self-concept as a reader.

Table 8

Quotes that suggest a theme organized by research question

Themes	Quotes that suggested a theme	Research Question Addressed by theme
Reading Enjoyment	*Q. How do you feel about reading?* "Great" "That's a tough one, I still don't really love reading like adults love reading" "Happy and excited" "I used to feel a little annoyed, but now I feel actually pretty happy reading"	*RQ. 3*
Improved reading confidence	*Q. How has your reading changed?* "I learned lots of words" "I don't have to go back and repeat words as much" "Actually, I have to say a lot faster" "It makes me read more slower and take my time"	*RQ. 4*
Decreased anxiety	*Q. How did you feel when reading with the therapy dog?* "I felt super, super, super good" "I felt happy and excited" "Happy and really excited because I love dogs" "I felt excited" "I felt calm" "Happy and calm" "He's comfortable to lie on"	*RQ. 2*

Note. The quotes above are answers from various students in the dog group.

The responses to the interview questions provide additional information for the research questions in this study.

RQ 1: Does reading aloud in the presence of a therapy dog improve reading fluency for students with dyslexia?

Students answered the interview question; *"How has your reading changed?"* Although students could have shared any way that they felt their reading changed, most of them focused on aspects of fluency such as their decoding accuracy and reading rate. For example, one student indicated that he/she did not have to go back and repeat words as many times indicating that they read the word correctly the first time. Another student indicated that they "learned lots of words." Although in this case, it is unclear whether they were referring to new vocabulary or how to decode new words. Other students shared changes in their reading rate as well, one indicating that they read faster, and another sharing that they now read slower and took their time. Some students interpret improving their reading fluency with 'reading faster' however, teachers try to emphasize that reading fluently is not reading faster, but rather reading more smoothly and with expression. This can be a confusing concept for students. Based on the answers to this interview question, students seemed to notice ways in which their reading fluency changed based on their mention of their word reading and reading rate.

RQ 2: Does reading in the presence of a therapy dog decrease reading anxiety for students with dyslexia? Students answered the interview question, "*How did you feel when reading with the therapy dog?"* Answers to this interview question ranged from students clearly expressing feeling calm, to those expressing excitement and happiness. One student mentioned

the physical comfort the dog provided because he was comfortable to lie on. None of the students mentioned any negative feelings about reading with the dog. All of them expressed positive feelings of happiness, excitement, and/or calmness.

RQ 3: Does reading in the presence of a therapy dog increase reading motivation for students with dyslexia? Students answered the interview question, *"How do you feel about reading?"* One student indicated that he may feel more motivated to read when he responded, "I used to feel annoyed, but now I feel pretty happy reading." Another student did not indicate any increase in motivation when s/he responded, "That's a tough one, I still don't really love reading like adults love reading." Some student responses to the question, *"How did you feel when reading to the therapy dog?"* elicited feelings of happiness and excitement which could indicate an increased motivation to read, but a follow up question would have been necessary to clarify and better understand their reading motivation.

RQ 4: How do students with dyslexia feel about their self-efficacy as readers when in the presence of a therapy dog? Answers to the interview questions indicated that students had some improved confidence in their reading. Some students noticed an improvement in their reading such as accurately reading words and not having to repeat words, and changes in their reading rate and fluency. Students also indicated feelings of happiness, calmness, and excitement when reading with the therapy dog.

Additional Information from Fluency Session Observations

The researcher recorded observations on student actions, dog actions, and teacher actions during each fluency session (Appendix E). No formal coding of observations took place, but the observations may help to provide context for what was occurring during the fluency sessions. Students 1, 2, and 3 all interacted consistently with the dog by greeting him enthusiastically when they entered the room and talking to him about what they would read that day. One student entered the room and exclaimed, "I missed you Captain! Are you excited to hear your favorite book?" Another student said, "I'm going to pick a book that I think Captain is going to really like, it will put him right to sleep." Students 1, 2, and 3 also regularly reached out to hug and pet the dog while they were reading. Student 1 reached out to touch the dog at least 6 separate times each session and often left his/her hand on his head or back while he/she read. One observational note on this student at the start of the session read, "Immediately hugs, pets dog, and sits down and shows the book to dog, telling him what s/he's going to read." Student 1 started every session in this manner and was immediately engaged with the dog and his/her reading. Student 3 had the next highest number of interactions with the dog per session. Some observational notes on student 3 mention some frustration with reading, followed by an interaction with the dog. For example, one observation noted, "Student became frustrated and put the book on the ground." The teacher responded, "Do you need a little break?" "Student began petting the dog, dog rolled over, student smiles and begins reading again." Student 2 had similar interactions with the dog where s/he would become frustrated and turn his/her attention to the dog instead of reading for a short break, and then return to reading. Student 7 had the fewest number of interactions with the dog while reading as one observation noted, "Student sat down and began talking about which book to read today, but ignored the dog other than a quick 'hi'." Overall, the teacher did not

encourage the children to interact with the dog but followed the reading fluency protocol and focused her attention on the fluency session.

Figure 9 shows a summary of the percent changes for students in the dog group from pre- to post- intervention for each measure. Student 1 began the intervention at a second grade reading level. This student had the highest percent change in easyCBM Passage Reading Fluency scores from pre- to post- test with a 95.7% change. Weekly informal running records recorded WCPM with the text the student was currently reading. The percent change from week 1 to week 7 for student 1 was 5.6%. Student 1 showed a 45% decrease in anxiety from pre- to post- test according to the percent change in scores on the Abbreviated Reading Anxiety Questionnaire. Student 1 showed a 4.2% increase in reading motivation according to the percent change in scores on the Motivation to Read Profile. This student had the highest level of interaction with the therapy dog during each session according to observational notes. Additionally, an e-mail to one student's advisor from the mother indicated that the mother was noticing positive feelings about the reading intervention at home. The mother e-mailed the advisor requesting that a photo be taken of the student reading to the dog during a fluency session so that the mother could use it as a conversation starter with her child at night, "We are enjoying our talks about Captain, would you be willing to snap a photo with *student name removed here for privacy* and Captain? It builds exciting conversation at home". This request was met and the advisor shared with the researcher that this student was chatting about reading to the dog regularly, whereas it was difficult for the mother to get her child to share anything about his/her school day before the dog therapy had been implemented.

Student 2 began the intervention at a second grade reading level. This student had the third highest percent change in easyCBM Passage Reading Fluency scores from pre- to post- test

with a 14.6% change. The percent change in WCPM on the weekly informal running records for student 2 from week 1 to week 7 was 7.3%. Student 2 showed a 52.6% decrease in anxiety from pre- to post- intervention according to the percent change in scores on the Abbreviated Reading Anxiety Questionnaire. Student 2 showed a 23.4% increase in reading motivation according to the percent change in scores on the Motivation to Read Profile. This student had the next highest level of interaction with the therapy dog during each fluency session according to observational notes.

Student 3 began the intervention at a second grade reading level. This student had the second highest percent change in easyCBM Passage Reading Fluency scores from pre- to post-test with a 74.7% change. The percent increase for informal weekly running records for Student 3 was 52.5%. Student 3 showed a 25% decrease in anxiety from pre- to post- intervention according to the percent change on the Abbreviated Reading Anxiety Questionnaire. This student also showed a 22.6% increase in reading motivation according to the percent change in scores on the Motivation to Read Profile. Student 3 had the second lowest level of interaction with the therapy dog during fluency sessions according to observational notes.

Student 7 began the intervention at a second grade reading level. This student had the lowest percent change in easyCBM Passage Reading Fluency scores from pre- to post- test among both the dog and non-dog groups with a change of 1.4%. This student was also the only student who was moved up to a third grade fluency passage because he/she scored above the 50th percentile at the second grade level, so the difficulty of text was higher for this student. The percent change on weekly informal running records for Student 7 from week 1 to week 7 was 23.5%. Student 7 did not show any change in anxiety according to the pre- to post- intervention Abbreviated Reading Anxiety Questionnaire. Student 7 showed a 7.7% increase in reading

motivation according to the percent change in scores on the Motivation to Read Profile. This student had the lowest level of interaction with the therapy dog during fluency sessions according to observational notes.

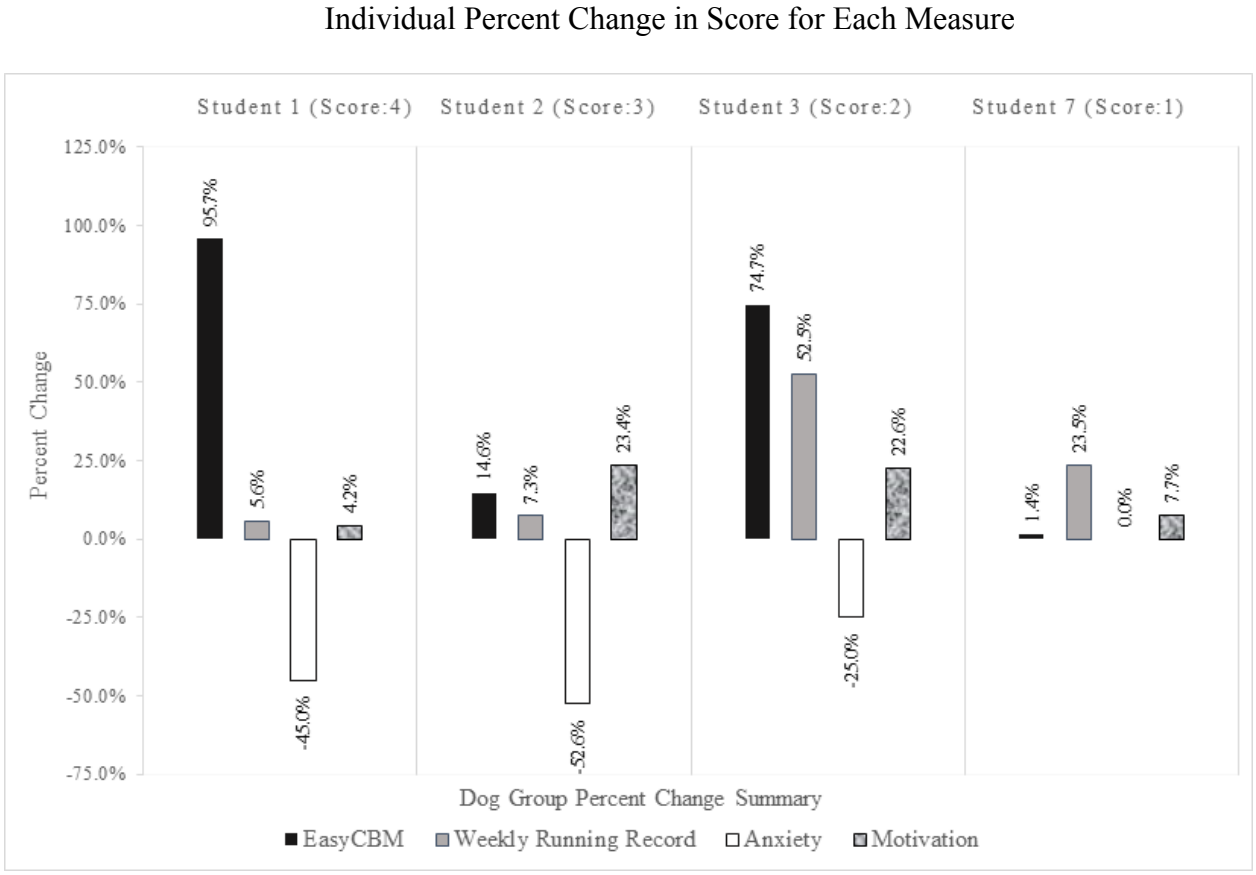

Figure 9. Summary of percent change for each measure for dog group.

Evidence of Trustworthiness

Credibility relates to the validity of research results. According to Creswell (2013) "validation" in qualitative research is the process of assessing the accuracy of the findings in a particular study. Creswell (2013) explains that the process of validation is a strength of qualitative research because it relies on time spent in the research setting, thick description, and closeness of the researcher to the participants. For this particular study, the researcher spent each fluency session taking careful observational notes on the actions of the students, the teacher, and the therapy dog. Observing the body language of the students, comments made by the students and the teacher, and observing each student read and interact with the therapy dog allowed the researcher to create a clear picture of what happened during each intervention session. The researcher also used triangulation of data in order to notice themes that developed among data sources. For example, this study was a sequential mixed methods design which allowed the researcher to gather quantitative data on reading fluency, anxiety, and motivation and then follow that with qualitative interview data to help gain a better understanding of what students experienced during each intervention session. The researcher also clarified any researcher bias and explained that although he/she had positive experiences using therapy animals with students in the past, the help of another teacher to deliver the intervention would allow the researcher to only observe and take notes so as not to interfere with the experience of the students or unintentionally sway any responses during data collection such as the interviews. Member checking was an important method for ensuring credibility as well. According to Creswell (2013) this is an essential component to ensuring credibility of interview data. The researcher used the iPhone Rev Recording application to transcribe audio data, and then followed up with careful readings of the transcripts to ensure that they matched the audio recordings. Additionally, the

participating teacher checked with each student to make sure that their responses accurately reflected their feelings and experiences. All participants indicated that they felt their responses reflected their experiences. Another important aspect of the credibility of this study is the rich, thick description from observational notes and the interviews. Creswell (2013) explains that this type of description helps to provide details around a theme that may develop. In this study, the researcher provided direct quotes, and notes on student, teacher, and therapy dog actions to provide additional details for both the quantitative and qualitative data. The doctoral chair provided periodic feedback on the researcher's work to ensure it met the scholarly standards of doctoral dissertation studies at the University of Bridgeport.

Transferability is how the research results can be applied to other contexts. The results from the interview questions regarding the students' experiences reading with a therapy dog and their feelings about themselves as readers are specific to this group of students and cannot be generalized to other students. However, with transferability the thick description provided from this study allows readers to decide how applicable the information is to their own setting (Korstjens & Moser, 2017). Quantitative information on fluency, anxiety, and motivation from this study may inform the activities of other reading therapy dog programs.

The researcher employed several techniques to ensure dependability and reliability in this study. For example, the researcher took extensive observational notes on the research process, specifically on each intervention session and assessment. These notes helped the researcher to describe not only the intervention sessions but also the data collection and analysis strategies to create a clear picture of the methods for the study (Creswell, 2014). Additionally, reflexive notes on the research process helped the researcher to stay in tune with her role in the study, previous experiences, and potential bias (Creswell, 2014). The mixed methods study enabled the

researcher to examine both the quantitative and qualitative data together through triangulation of the data. In examining both the quantitative and qualitative data in this study, the researcher was able to see common themes arise from the data (Creswell, 2014).

The researcher used strategies to ensure confirmability. For example, the researcher took reflexive field notes throughout the process in order to make sure that she was constantly aware of her own experiences and how these could impact the study. This meant taking notes on the assessment data collection process, interviews, and each intervention session. Additionally, the researcher used member checks to confirm the accuracy of the qualitative interview data.

Chapter 5 includes the results discussed, study limitations, and avenues for future research.

CHAPTER 5: SUMMARY, CONCLUSION, AND RECOMMENDATIONS

The purpose of this mixed methods case study was to examine the effect of a therapy dog assisted reading intervention on reading fluency, anxiety, and motivation among third grade students with dyslexia. For struggling readers who require one-on-one reading intervention, reading can be an anxiety provoking experience. Moreover, reading anxiety is negatively correlated with reading self-concept, such that higher levels of reading anxiety are associated with a lower reading self-concept (Katzir, Kim, & Dotan, 2018). To help ameliorate these negative influences educators need to provide explicit, systematic, and research based literacy instruction, while simultaneously helping students to feel at ease while practicing skills that are challenging for them. Reading interventions that utilize a therapy dog have the potential to be a tool for reaching struggling readers with specific needs. There are rising numbers of therapy dog teams across the United States and internationally. The American Kennel Club (ACK) recognizes Intermountain Therapy Animals with 3,500 therapy teams, Therapy Dogs International with 24,750 teams, Alliance of Therapy Dogs with 15,000 teams, and Love on A Leash with 2,000 teams ("ACK Recognized Organizations", 2019). It is essential to gather data on the effectiveness of this growing practice so that national and international school leaders can make informed decisions about the costs and benefits of these emerging practices.

Summary of the findings

Hypothesis: Reading in the presence of a therapy dog will improve reading fluency for third grade students with dyslexia.

According to the results of the easyCBM Fluency assessment, students in the therapy dog group showed greater percent increases in reading fluency scores from pre- to post- assessment

than students in the non-dog group. All students in the therapy dog group scored higher on fluency measures post intervention, except for Student 7 who did not show growth. All students in the non-therapy dog group also improved their fluency scores except for student 4 who had a lower score post intervention.

The weekly informal running records did not show more significant growth for one group over the other; students in both groups showed fluency growth between the start and end of the fluency intervention. For example, while Words Read Correctly Per Minute growth varied on the informal running records week to week, students in both groups showed percent increases ranging from 5.3% to 46%.

Hypothesis: Reading in the presence of a therapy dog will decrease reading anxiety for students with dyslexia.

Students in the dog group showed greater percent decreases in their levels of anxiety from pre- to post- assessment and more of the students showed decreased levels of anxiety than those in the non-dog group, as assessed by the Abbreviate Reading Anxiety Questionnaire (Katzir, 2018). For example, three students in the therapy dog group showed decreases in anxiety from pre- to post- test, and one stayed the same. One student in the non-therapy dog group showed a decrease in anxiety, one stayed the same, and one increased.

Hypothesis: Reading in the presence of a therapy dog will increase reading motivation for students with dyslexia, as determined by the Motivation to Read Profile (Malloy et al., 2013).

Students in the therapy dog group had higher percent improvements in reading motivation from pre-to-post assessment than those in the non-dog group. In fact, 100% of the

students in the therapy dog group showed an increase in total reading motivation and their self concept as readers.

Qualitative interview responses indicated that students experienced a variety of positive feelings towards reading with the therapy dog.

Interpretation of Findings

For the first research question, *does reading in the presence of a therapy dog increase reading fluency?* The independent variable was the presence of a therapy dog and the dependent variable was reading fluency. Overall, students in both groups showed increases in reading fluency from the start to the end of the reading intervention. The easyCBM Fluency Assessment appeared to show greater percent changes in reading fluency for some students in the dog group than those in the non-dog group. However, all students in both groups showed growth in fluency from pre-to-post intervention based on the informal running records.

There is clear research on how to improve reading fluency. For example, according to Rasinski et al. (2017) reading fluency is improved through practice reading a wide variety of texts. For this study, students read a variety of texts including fluency passages, non-fiction, and fiction at their reading level. Additionally, reading connected texts has shown to improve reading fluency among students with learning disabilities (Tressoldi, Vio, & Iozzino, 2007). For this study, students read actual books at their reading level rather than word or sentence lists. This study employed research based fluency instruction normally used by the teachers at this school, so fluency may have improved simply because of the additional practice time and instruction from the teacher. However, when examining the significant percent increases among certain students in the dog group paired with the qualitative data from interviews and observational

notes on their level of interactions with the dogs, the independent variable of the therapy dog may have played a role in the students' fluency, anxiety, and motivation levels. The theoretical framework created by Gee, Griffin, and McCardle (2017) to guide research in the field of animal-assisted therapy displays the interplay of human animal interactions on social emotional development and learning.

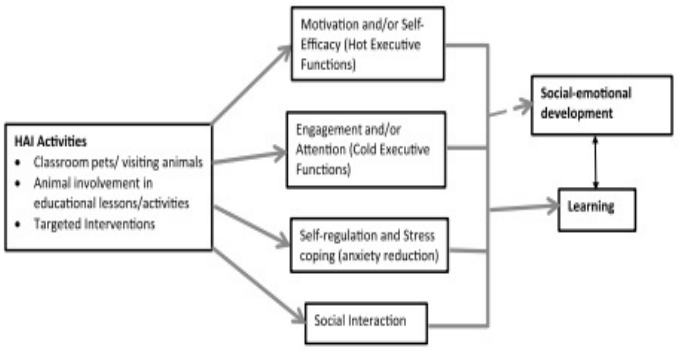

Figure 10. This proposed framework highlights the relationship between human animal interactions and the effects on motivation and self-efficacy, engagement, anxiety, social interactions, and the indirect effects on learning and social emotional development. From "Human-animal interaction research in school settings: Current knowledge and future directions" by, N. Gee, J. Griffin, and P. McCardle, 2017, AERA Open, 3, p. 3. Copyright 2017. Reprinted with permission from Sage Publications.

According to Melekoglu (2011), struggling readers often avoid reading and, as a result, their reading skills do not improve. Research shows that developing reading fluency among struggling readers plays an important role in improving reading comprehension and reading achievement (Rasinki, Homan, & Biggs, 2009). In this research study, Student 1 had the highest percent change in fluency scores as indicated by the easyCBM Passage Reading Fluency

Assessment with a 95.7% change from pre-to-post test. Student 2, had a 14.6% change in reading fluency, Student 3 had a 74.7% change, and Student 7 had 1.4% change. When looking at observational notes on student interactions with the therapy dog, the researcher observed that Student 1 had the highest level of interaction with the therapy dog, with at least 6 interactions per session, and the largest increase in reading fluency with an increase of 95.7%. Student 3 had the second highest percent change in reading fluency at 74.7% and the second highest level of interaction with the therapy dog. Student 2 had the third highest increase in reading fluency at 14.6% and the third highest level of interaction with the therapy dog. Student 7 had 1.4% change in reading fluency and the lowest level of interaction with the therapy dog. Taken together, the results from each of these students may suggest that while overall improvement appeared to take place for all of the students, there are also individual differences in students' responses to the therapy dog, as one student did not show a percentile change.

According to research by Carroll and Illes (2006) students with dyslexia often experience anxiety associated with their achievement. Student 1 had a 45% decrease in anxiety from pre-to-post test according to the Abbreviated Reading Anxiety Questionnaire, Student 2 had a 52.6% decrease in anxiety, Student 3 had a 25% decrease in anxiety, and Student 7 did not show any change and had the lowest level of interaction with the therapy dog. Those students who experienced a decrease in anxiety in the presence of the therapy dog extends research by Beetz et al. (2012). This researcher found that children ages 7-11 years who took part in a stressful activity while interacting with a dog had lower levels of stress than those children interacting with a friendly person.

Student 1 had a 4.2% increase in reading motivation from pre-to-post testing according to the Motivation to Read Profile. Student 2 showed a 23.4% increase in reading motivation, and

student 3 showed a 22.6% increase in reading motivation. Student 7 showed a 7.7% increase in reading motivation. Students who struggle with reading, particularly those with disabilities, often have trouble finding the motivation to practice reading (Melekoglu, 2011). Research shows that practice time reading is essential to improving reading skills (Gambrell, 2011). Even though Student 1 had the highest level of interaction with the therapy dog, s/he did not show a large increase in reading motivation from pre-to-post intervention. This student also did not begin with a higher motivation score than other students. Additional measures of motivation could provide more information on motivation for each student. Also, an interview question that explicitly asks about reading motivation would be helpful for providing more information on student motivation.

Qualitative data from interviews was essential for this study because of the small sample size. Although quantitative data was collected and utilized to provide information on fluency, anxiety, and motivation according to assessments, qualitative interview data provided important insight into the emotions and experiences of the students involved. The qualitative research question addressed in the study was: How do students with dyslexia feel about their self-efficacy as readers when in the presence of a therapy dog? Throughout the research process various themes developed that the researcher was able to confirm through other research that has been conducted in the field and the theoretical frameworks that guided this study. Themes of 'reading enjoyment', 'improved reading confidence' and 'decreased anxiety' emerged through the interviews. One theme that emerged in the current study was 'decreased anxiety'. Kertes et al., (2017) also found that children conducting a stressful task showed lower stress levels when in the presence of a dog. Treat (2013) conducted research that indicated that students had a 'calming experience' when in the presence of a therapy dog. Beetz et al. (2012) conducted a

study in which children showed decreases in stress when in the presence of a dog versus a friendly person. These studies helped to shed light on the impact of the presence of a therapy dog on students involved in other stressful situations, similar to the stressful experience of struggling readers taking part in a reading intervention.

Another theme that developed during this study was 'reading enjoyment'. Griess (2010) conducted a study in which students spent an average of 4.04 additional minutes reading when in the presence of a therapy dog. Additionally, Le Roux, Swartz, and Swart (2014) concluded that special education students involved in a reading to dog program showed greater enthusiasm for reading after participating in the program. These studies helped to show not only increased time spent reading but also excitement around reading.

Improved confidence in reading was another theme that emerged from this study because the students were able to choose the books they read. De Naeghel et al. (2012) conducted a study, which found that when students were provided with more autonomy for reading practice, they showed more positive reading behaviors and higher reading performance. This helped to support the autonomy provided to children in this study through their ability to choose their own books which may have played a role in their increased confidence.

Additionally, extensive observational notes provided additional information into what occurred during intervention sessions and provided valuable insight to both the quantitative and qualitative data. Observational data on how different students interacted with the therapy dog provided some context for other quantitative and qualitative data. For example, students 1, 2, and 3 regularly interacted with the therapy dog during each session. They greeted him enthusiastically, often with hugs, and talked to him about what they were going to read each day. All three of these students found a spot to read where both the dog and they would be

comfortable; usually this meant sitting on a rug on the floor where the dog would lie next to the student and the teacher would sit next to both of them. These students regularly rested an arm or hand on the dog and reached out to pet him while they read aloud. When these students became frustrated by reading and were offered a break by the teacher, they turned to the dog during this time to pet and talk to him. Student 7 had fewer interactions with the dog and always sat on the bench and the dog would lie at his/her feet. The student would greet the dog briefly at the start of each session but when offered a break would choose to engage in conversation with the teacher instead of engaging with the dog. While this student overtly showed less enthusiasm toward the dog than other students, s/he also displayed a calmness and trust of the dog.

Limitations

One limitation of this study was the small sample size of seven students. When working within a school it was important to respect school schedules and to avoid disrupting the school day as much as possible. As a result, the study used a convenience sample. Students were not randomly assigned to groups and instead group assignments were based on convenience. Without random assignment, there is a risk of pre-existing systematic differences between the two groups having an effect on any observed differences in the results. The inclusion and exclusion criteria were very specific because the researcher wanted to provide information on a particular population of students. Expanding the inclusion criteria would have increased the sample size, but the researcher would not have collected information for a very specific population i.e. students with dyslexia.

Second, the duration of the study was shorter than planned because of constraints on the school schedule and a change in school leadership.

Recommendations

Future studies should aim to recruit a larger sample size of students with dyslexia to have the power to run inferential statistics to systematically examine group differences between the dog and no dog conditions. A larger sample size could include several schools that serve the same population and ages of students so that important data on students with dyslexia could be collected. The current study had a specific age group, and specific inclusion criteria such as diagnosis of dyslexia and a certain reading level, which made for a smaller group of students from which to select.

Additionally, further research on anxiety and student reports of calmness when in the presence of the therapy dog could provide important information when therapy dog programs expand into social emotional learning as well. Attentional Control Theory explains that when someone perceives a threat, such as a struggling reader being asked to read aloud, all of his or her attention is focused on this perceived threat rather than on reading itself (Eysenck et al., 2007). It would be beneficial to better understand the specific ways in which students perceive the therapy dog as helping them to feel calmer. This could provide insight into whether or not this is dog specific, or whether another animal could provide the same comfort.

Future research including a follow up assessment in fluency, anxiety, and motivation six months later could provide information on whether or not the effects are long lasting though the presence of the therapy dog was removed. This would provide important data on whether or not the effects are long lasting when the dog is removed, or if the effects are only present with the therapy dog. This information could help educators and parents make informed decisions about how often students may benefit from taking part in a therapy dog program.

Another avenue for future work is to include students with a wider range of learning disabilities such as Attention-Deficit/Hyperactivity Disorder (ADHD) to increase the ability to generalize of the findings to larger groups of children. Educators, parents, and healthcare providers often struggle with how to treat children with ADHD. Data on the effect of a therapy dog on children with ADHD could provide parents and educators with important information on how these children react. This data could provide educators with an additional tool to help these children focus, or provide parents with opportunities to encourage these children to read outside of school at the many therapy dog reading programs at libraries across the country. Therapy dogs have the potential to provide different forms of comfort to students with different needs. Therapy dogs are increasing in popularity among schools so it is essential to know who benefits most from their presence.

Although it was important to gather information on students with dyslexia, it would be interesting to collect data on students with varying disabilities, and even some without any diagnosis but who are struggling readers. It is possible that further research on students with different disabilities could show that students with certain disabilities benefit more than others from interactions with therapy dogs. Data on the impact of therapy dogs on students with different disabilities would help teachers and interventionists use therapy dogs purposefully and effectively.

Additionally, future research could also look at students without disabilities who feel less confident in their reading abilities in relation to their peers. This research could collect data on the social emotional aspect of the presence of a therapy dog on students who do not see themselves as strong readers. It would be interesting to see how and when a student's self perception as a reader could change with the presence of a therapy dog. This data could provide

teachers and reading specialists with insight into how to help these struggling readers. Perhaps the presence of an adult is too intimidating for these children and they simply need additional practice time reading instead of adult intervention. A therapy dog could provide these children with a purpose for reading without the pressure of a teacher critiquing them. It would be interesting to see if therapy dog programs could be preventative of challenges like test anxiety. With the growing presence of therapy dog programs in schools and public libraries, it is important to understand the effects on a variety of populations.

Future research should examine the effect of therapy dogs on students during more interactive types of instruction. For example, in the current study, the therapy dog had the role of 'listening' to the reader. Overall, the interaction with the therapy dog was limited to what the student initiated with the dog. It could be interesting and informative to look at more interactive types of literacy instruction that utilizes the therapy dog. For example, teaching vocabulary that incorporates the therapy dog. New vocabulary such as 'smooth' could be taught in conjunction with the tactile aspect of actually touching the dog. Teachers could explore the different ways therapy dogs can be incorporated into instruction beyond their presence.

The current study examined the presence of a therapy dog in addition to an already robust literacy instructional program with expert literacy teachers. It would be beneficial to conduct additional research on therapy dog programs in which the student simply reads aloud to the therapy dog. This would provide educators and parents with valuable information on the effectiveness of such programs that exist at libraries and schools where there are opportunities for children to read aloud to volunteer therapy dog teams.

Future research could also include interviews with classroom teachers and parents to gain insight into changes they notice in students involved in a therapy dog program. There were

many times that a teacher would stop the researcher in the hallway to share how excited a participating student was about a book they were reading with the therapy dog or an advisor would share a parent's view on their child's participation. Teachers and parents could provide valuable insight into a student's experience reading with a therapy dog beyond the confines of the actual intervention session.

Future research could also include an opportunity for students to journal about their experience on a regular basis. The current study relied on interviews and observations to gain information on the student experience yet additional opportunities for students to share their feelings and experiences could be helpful. This is particularly important among students with expressive language challenges. Sometimes children have difficulty expressing their ideas and clearly formulating what they would like to convey. The freedom of journaling or sharing their experiences through drawing or another form of expression could provide additional valuable information among populations of students with learning disabilities.

Implications It is important that educational leaders have access to research on therapy dog programs in schools. Therapy dog programs for the facilitation of reading skills are growing in popularity in schools and libraries across the country. Therapy dog programs for social emotional learning are also becoming popular such as the Mutt-i-grees Curriculum developed in conjunction with the Yale School of the 21st Century in recognition of the changing social emotional needs of our nation's students ("About the Mutt-i-grees Curriculum", 2019). It is essential that school leaders from kindergarten through college level familiarize themselves with therapy dog programs so that they can make decisions about funding and supporting these opportunities where appropriate. Fowler (2013) explains that teachers and educational leaders are often left out of the important conversations and decisions about finding solutions to the

challenges in our educational system. The current study was implemented with the input of current teachers and advisors at this school and provides school leaders with insight into the day to day happenings of a therapy dog reading program.

Implementation of the findings of studies such as this one have an impact on policies regarding the use of therapy dogs in schools. There is also the potential impact on policy regarding literacy instruction. Above all, educational leaders are responsible for the implementation of programs that have value, that have the support of the school community, and that can be implemented successfully. Therapy dogs cannot replace strong research based instruction, yet they may have the potential to provide a supplement to strong teaching. School leaders need to use their expertise in curriculum and instruction to evaluate therapy dog programs and decide if and when they may provide a benefit to their students. Research such as this study provides school leaders with the information they need to make informed decisions about implementing therapy dog programs in their schools. As the use of therapy dogs in schools becomes more common there are implications for various educators. It is essential that all educators remember that struggling readers require systematic, explicit, multisensory reading instruction. Where this already exists, therapy dogs can provide a supplemental support for the social emotional challenges struggling readers face. Struggling readers find the most success when classroom teachers and reading specialists collaborate to help students. It is essential that common goals and regular progress monitoring take place for all students. There are important implications regarding therapy dogs and educators such as teachers and reading specialists. Many therapy dog programs such as R.E.A.D (Intermountain Therapy Animals, 2016) have a reading curriculum that the therapy dog volunteers actually implement themselves. While these volunteers have gone through training, it is important that teachers familiarize themselves with

this curriculum or ensure that they deliver the reading instruction themselves. Reading specialists and classroom teachers working within the same schools face challenges finding time to collaborate and share data on students, so it is particularly important that any outside organization providing instruction to students have a schedule for sharing data and information with classroom teachers and reading specialists.

School administrators need to make decisions about what type of therapy dog program is right for their school and their students. Ultimately, they need to have access to data that helps them decide whether a therapy dog program is going to be a part of their school curriculum, or perhaps a before or after school supplement.

School curriculum specialists should carefully examine therapy dog programs that come with a prescribed curriculum. Curriculum specialists must determine whether or not the curriculum fits the needs of the specific students in their school and the already existing school curriculum. If a therapy dog program is going to take place during school hours, training should be provided to participating teachers to ensure that they are comfortable incorporating a therapy dog into their curriculum. Additional training means more time and money spent on teacher training. When considering additional money spent, it is essential for school administrators and finance officers to consider whether or not a school has the ability to allocate funds to this area over other essential areas.

If a school leader decides that a new program, such as therapy dogs, will add value to their school, they then need to decide if they have the capacity and support for such a program. Leonard (2002) explains that capacity includes, "people; money; skills; authority; space; knowledge; managerial infrastructure; and any other physical or intellectual resources necessary to carry out the program" (p. 2). It is important for school leaders to look at the current capacity

of their organizations to see if a therapy dog program can in fact be carried out successfully. Data from studies such as this one help school leaders to make informed decisions regarding additional programming.

The recent incorporation of therapy dogs into schools, college campuses, and workplaces show an increased focus on the importance of our social emotional well-being. Society has the opportunity to benefit from the presence of therapy dogs in places that can induce stress such as schools, airports, and places of work. Additional research in this field will provide valuable empirical data beyond anecdotal evidence about the impact of therapy dogs in various settings in our society.

Conclusions

For students with dyslexia, literacy skills such as decoding, fluency, and comprehension can be developed through reading instruction interventions (Conway, Brady, Misra, & Allen, 2017). Research shows that students with dyslexia benefit from structured literacy instruction that is systematic, cumulative, explicit, and diagnostic (Ehri, Nunes, Stahl, & Willows, 2001). Students with dyslexia also often experience anxiety while reading because it is such a challenging task for them (Novita, 2016). Because of the challenges that students with dyslexia face in acquiring reading skills, it is important for educators to go beyond the academic intervention and also provide social and emotional support to these students. Therapy dog literacy programs in schools can serve as an additional tool for educators to support the social emotional needs of students as they receive research based literacy instruction. The increase in popularity of therapy dogs as part of literacy programs in schools and libraries across the United States and internationally means that school leaders need to be involved with and carefully monitor these programs in their schools. This study was conducted to address the gap that existed

in the literature about the use of therapy dogs among students with dyslexia. The findings support the use of therapy dogs as a tool to augment strong literacy instruction and support the social emotional needs of students. Therapy dog reading programs in schools should be a supplement to research based, explicit, systematic literacy instruction. Moreover, school leaders need to ensure that all constituents understand the value of programs and provide the necessary support and capacity to implement the programs effectively.

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Appendix A

Reading Anxiety Scale

The Abbreviated Reading Anxiety Questionnaire

Developed by Prop. Tami Katzir

2nd – 6th Grades

Indicate how worried you feel when you:

		1 Not at all	2 Rarely	3 Sometimes	4 Often	5 Always
1	Need to read a page with a lot of words, without drawings					
2	Think of language arts class					
3	Watch the teacher read from the whiteboard					
4	Hand over a test or a reading assignment in language arts class					
5	Receive homework in language arts					
6	Listen to the teacher read during language class					
7	Listen to another student read from the whiteboard					
8	Are asked to take a surprise quiz in language arts					
9	Start to learn a new subject in language arts class					

Based on the Math Anxiety Test

Hopko, D. R., Mahadevan, R., Bare, R. L., & Hunt, M. K. (2014). The Abbreviated Math Anxiety Scale (AMAS): Construction, Validity, and Reliability. *Assessment*, 10, 178-182.

Appendix B
Motivation to Read Profile–Revised

Figure 2 Administration Guidelines for the Reading Survey

Motivation to Read Profile – Revised
Administration Guidelines

Preparation

- ✓ Be sure that you have enough copies of the survey for your class.
- ✓ Decide upon how to seat students so that their privacy is ensured when entering answers onto their forms.
- ✓ Have students clear their desktops except for a sharpened pencil.

Distribute the Survey

- ✓ Distribute copies of the reading survey. Ask students to write their names on the line provided.
- ✓ Ask students to fill in the date on the line provided.
- ✓ Ask students to fill in the teacher's name on the line provided.
- ✓ Please read each item two times aloud, even for higher grade levels. It's important that reading ability is not a complicating factor when responding to the items.

Introduce the purpose of the survey. Say:

I am going to read some sentences to you.
I want to know how you feel about reading.
There are no right or wrong answers.
I really want to know how YOU honestly feel about reading.
Your answers will help me to make reading more interesting for you.
I will read each sentence twice.
Do not mark your answer until I tell you.
You can mark your answer by checking the box that is best for you.
The first time I read the sentence, I want you to think about the best answer for you.
The second time I read the sentence, I want you to fill in the space beside your best answer.
Be sure to mark ONLY ONE answer.
Remember: Do not mark your answer until I tell you.
OK, let's begin.

Administer Sample Items
Use sample items A and B to demonstrate how the numbered items will be administered. Monitor the class for understanding of directions.

Say:

Let's practice listening and then marking with the first two items, A and B. Listen and follow along as I read Item A [point to where Item A is on your copy].
I am in [pause] second grade [pause] third grade [pause] fourth grade [pause] fifth grade [pause)] sixth grade.

Remember – you're thinking, not marking yet. You're just thinking of what is right for you.

Monitor the class for understanding. Then read Sample A again. **Say:**

This time, as I read the sentence, mark the answer that is right for you.
I am in [pause] second grade [pause] third grade [pause] fourth grade [pause] fifth grade [pause] sixth grade.

Check that students have marked their papers correctly and clearly. Demonstrate what a clear marking would look like if necessary.
Read the second sample item the same way. **Say:** ***Now let's try Item B:***
I am [pause] a boy [pause] a girl [pause]. Remember – you're thinking and not marking!
This time, when I read the sentence, mark the answer that is best for you.
I am [pause] a boy [pause] a girl.
Any questions? [pause to answer questions]. Ok. Let's go on to item number 1...

Administer the Numbered Items 1 – 20

Read the remainder of the items as above – first for thinking and the second time for marking.
Be sure to be clear about what item number you are on (in case students lose their place).
Move around the classroom as you read the items to monitor understanding.
When all items have been administered, collect the surveys and set them aside for scoring.

Figure 3 Reading Survey

MOTIVATION TO READ PROFILE - R

Name:_____Date:_____

Teacher: _____

A. I am in _____.

- ❒ 2nd grade
- ❒ 3rd grade
- ❒ 4th grade
- ❒ 5th grade
- ❒ 6th grade

B. I am a _____.

- ❒ boy
- ❒ girl

1. My friends think I am _____.

- ❒ a very good reader
- ❒ a good reader
- ❒ an OK reader
- ❒ a poor reader

2. Reading a book is something I like to do.

- ❒ never
- ❒ almost never
- ❒ sometimes
- ❒ often

3. When I come to a word I don't know, I can _____.

- ❒ almost always figure it out
- ❒ sometimes figure it out
- ❒ almost never figure it out
- ❒ never figure it out

4. My friends think reading is _____.

- ❒ really fun
- ❒ fun
- ❒ OK to do
- ❒ no fun at all

5. I read _____.

- ❒ not as well as my friends
- ❒ about the same as my friends
- ❒ a little better than my friends
- ❒ a lot better than my friends

6. I tell my friends about good books I read.

- ❒ I never do this
- ❒ I almost never do this
- ❒ I do this some of the time
- ❒ I do this a lot

7. When I am reading by myself, I understand_____.

- ❒ everything I read
- ❒ almost everything I read
- ❒ almost none of what I read
- ❒ none of what I read

8. People who read a lot are _____.

- ❒ very interesting
- ❒ sort of interesting
- ❒ sort of boring
- ❒ very boring

9. I am _____.

- ❒ a poor reader
- ❒ an OK reader
- ❒ a good reader
- ❒ a very good reader

Figure 3 Reading Survey *Continued*

10. I think libraries are _____.

- ❒ a really great place to spend time
- ❒ a great place to spend time
- ❒ a boring place to spend time
- ❒ a really boring place to spend time

11. I worry about what other kids think about my reading _____.

- ❒ a lot
- ❒ sometimes
- ❒ almost never
- ❒ never

12. I think becoming a good reader is_____.

- ❒ not very important
- ❒ sort of important
- ❒ important
- ❒ very important

13. When my teacher asks me a question about what I have read,_____.

- ❒ I can never think of an answer
- ❒ I almost never think of an answer
- ❒ I sometimes think of an answer
- ❒ I can always think of an answer

14. I think spending time reading is _____.

- ❒ really boring
- ❒ boring
- ❒ great
- ❒ really great

15. Reading is_____.

- ❒ very easy for me
- ❒ kind of easy for me
- ❒ kind of hard for me
- ❒ very hard for me

16. When my teacher reads books out loud, I think it is _____.

- ❒ really great
- ❒ great
- ❒ boring
- ❒ really boring

17. When I am in a group talking about books I have read, _____.

- ❒ I hate to talk about my ideas
- ❒ I don't like to talk about my ideas.
- ❒ I like to talk about my ideas
- ❒ I love to talk about my ideas

18. When I have free time, I spend_____.

- ❒ none of my time reading
- ❒ very little of my time reading
- ❒ some of my time reading
- ❒ a lot of my time reading

19. When I read out loud, I am a _____.

- ❒ poor reader
- ❒ OK reader
- ❒ good reader
- ❒ very good reader

20. When someone gives me a book for a present, _____.

- ❒ I am very happy
- ❒ I am happy
- ❒ I am unhappy
- ❒ I am very unhappy

Appendix C

Interview Protocol

Time of Interview:
Date:
Place:
Interviewer:
Interviewee:
Turn on recording device. Interviewer says: I'd love to learn more about your experience reading with the therapy dog. I'm going to ask you a few questions and I want you to do your best to answer honestly and openly. (Allow time for the child to process the questions, repeat if needed).
Interviewer asks these questions: 1. How did you feel when reading with the therapy dog? (Prompt for 'listen', 'calm', 'comfortable', 'excited')

2. How has your reading changed since reading with the therapy dog?

3. How do you feel about reading? (Prompt for ‘comfortable’, ‘excited’)

Interviewer says: Thank you for taking the time to answer these questions! *Turn off recorder.*

Appendix D

Reading Fluency Session Protocol

Time: 20 minutes, 2X/Week
Teacher has six books laid out for student to choose from
1. Greet student in a friendly manner, ask about their day.
2. Explain that the child has about 2 minutes to look through the books and choose one to start with.
3. Once the child has chosen a book the teacher prompts the student to use their 'Before Reading Strategies': Examine the cover, take a picture walk, read the blurb, make a prediction, look for new vocabulary. Teacher should define unknown words for student.
4. Prompt child to begin reading. Before they start remind them to use 'During Reading Strategies': Read with expression, scoop phrases with finger, chunk unknown words into syllables. Teacher may provide the word if the child gets stuck even after chunking into syllables or using other decoding strategies.
5. After 15 minutes of the session, stop the student and prompt them to use their 'After Reading Strategies': Summarize what they have read, share any reflections.

Appendix E

Session Observations

Student Actions/Comments	Dog Actions	Teacher Actions
Time:		
Time:		
Time:		
Time:		
Time:		
Time:		

Appendix F

Letter granting permission for use of Reading Anxiety Scale

Tami Katzier Tues, Oct 16, 2018

<katzirta@gmail.com 1:42AM

Dear Mary,

Thank you for writing, and your topic for your dissertation sounds so interesting!!

I am attaching our abbreviated measure, and of course you can use it. If you do, would love to hear of your results:)

Good luck,

Tami

Appendix G

CITI Program Certificate

CITI PROGRAM

Completion Date 17-Aug-2017
Expiration Date 16-Aug-2020
Record ID 24034054

This is to certify that:

Mary Elizabeth Clune

Has completed the following CITI Program course:

Social & Behavioral Research - Basic/Refresher (Curriculum Group)
Social & Behavioral Research - Basic/Refresher (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

University of Bridgeport

CITI
Collaborative Institutional Training Initiative

Appendix H

Letter to head of school for permission to conduct study

Dear Head of School,

I am sending this e-mail because I am interested in conducting a study about how reading to a therapy dog impacts reading fluency, anxiety around reading, and motivation to read among students with dyslexia.

I know that _____ School values explicit research-based instruction in reading, particularly for the students with language-based learning disabilities whom you serve. The purpose of this research is to learn more about how therapy dogs can serve as a supplement to regular reading instruction and help students with the anxiety and motivation difficulties they may face while reading. Reading with therapy dogs may provide another useful tool for educators when trying to reach struggling readers who face not only the academic but also the social and emotional difficulties associated with dyslexia.

Please review the attached materials with a description of the study. Thank you for your time and consideration. Please feel free to contact me with any questions you may have.

Best,

Mary Elizabeth Clune

mclune@my.bridgeport.edu

MEMORANDUM

[redacted] SCHOOL

HEAD OF SCHOOL

TO: **The University of Bridgeport**

FROM: **Dr. [redacted]**

DATE: **April 9, 2019**

RE: **Mary Elizabeth Clune's Dissertation Research**

As Head of [redacted] School, it is with great pleasure that I write this letter of support for Mary Elizabeth Clune who wishes to conduct research for her dissertation at our school. Her study, *Measuring the Effects of a Canine Assisted Reading Intervention for Third Grade Students with Dyslexia: A Mixed Methods Case Study,* is one that fits well into the mission of our school, which addresses the learning needs of children with language-based learning disabilities including dyslexia. It will be our pleasure to support this study and we look forward to hearing the results and considering changes/additions we might make to our program.

It will be a pleasure to have Mary Elizabeth back on campus. She was a member of our faculty a number of years ago and was an exceptional teacher. She is highly respected by our entire faculty and staff. We are excited that she had chosen to do her research at our school.

[redacted] School
[redacted]
[redacted]@[redacted].org

Appendix I

Letter to parents and students to have children volunteer to participate in study

Dear Parent and Student,

I am sending this e-mail because your child is a third-grade student at _____ School, receiving instruction in reading through [redacted] Class.

I am conducting a study about how reading with a therapy dog impacts reading fluency, anxiety around reading, and motivation to read.

If you would like your child to participate in the study, they must be in Grade 3, feel comfortable around dogs, have no known allergies to dogs, and have an evaluation with a diagnosis of dyslexia.

Students who meet the above criteria and volunteer to participate in the study will take part in a ten-week reading fluency intervention wherein they have extra reading fluency practice for 20 minutes two times per week. Some students will be reading with an adult only, and some will be reading with an adult and a therapy dog.

Please review the attached materials, which include an informed consent form and a description of the study. Feel free to contact me with any questions you may have. Thank you for your consideration.

Sincerely,

Mary Elizabeth Clune

mclune@my.bridgeport.edu

University of Bridgeport Informed Consent Template

[UB HRP-502 Revised 12/3/18]

UNIVERSITY OF BRIDGEPORT
CONSENT TO BE PART OF A RESEARCH STUDY
Protocol Number: 2019-04-05

Parent Consent Form

1. Study Title: Measuring the Effects of a Canine Assisted Reading Intervention for Third-Grade Students with Dyslexia: A Mixed Methods Case Study

Principal Investigator: Mary Elizabeth Clune, M.Ed., University of Bridgeport Graduate School of Education

1.1 Invitation to be Part of a Research Study

Your child is invited to take part in this research study. Your child is invited to be in this study because they are a third grade student at [redacted] School and according to their IEP they have a diagnosis of dyslexia and read below grade level. Your child is also comfortable around dogs and not allergic. Taking part in this research study is voluntary.

1.2 Things you should know:

- The purpose of the research study is to measure the effects of a canine assisted reading intervention for third grade students with dyslexia on reading fluency, reading anxiety, and reading motivation. If you choose to have your child participate, they will be asked to be a part of a reading fluency intervention reading aloud either with an [redacted] School teacher and a registered therapy dog or only a[redacted] teacher twice per week for twenty minutes. This study will take approximately ten weeks. The reading sessions will take place during [redacted] period and the atmosphere is meant to be relaxed and enjoyable for the student.
- The study will provide the benefit of reading fluency practice for all students involved.
- Taking part in this research study is voluntary. Your child doesn't have to participate and you can stop their participation at any time. Whatever you decide will not be held against you or your child.

Please take the time to read this entire form and ask questions before deciding whether to take part in this research study.

University of Bridgeport Informed Consent Template

[UB HRP-502 Revised 12/3/18]

2. PURPOSE OF THIS STUDY

2.1 What is the research study about and why are we doing the research study?

The purpose of this study is to measure the effects of a canine assisted reading intervention for third grade students with dyslexia on reading fluency, reading anxiety, and reading motivation. Children with dyslexia often have difficulty with reading sometimes accompanied by anxiety around reading and difficulty finding the motivation to practice reading. Many schools are utilizing therapy dogs to promote reading and alleviate some of the anxiety around reading for students. Since we know how valuable instructional time is, it is important to know if there are benefits to reading with a therapy dog and if they may be a unique tool for helping students find enjoyment in reading.

2.2 How long will the research last?

We expect that you will be in this research study for *ten weeks*.

2.3 How many people will be studied?

We expect about 10 people here will be in this research study. We expect that you will be in this research study for *ten weeks*.

3. **Who may participate?** Third grade students with a diagnosis of dyslexia who read at least one but no more then three levels below grade level who are comfortable with dogs and not allergic.

3.1 What happens if I say yes, I want to be in this research?

If you agree to have your child take part in this study, they will first have their reading fluency evaluated through a one minute reading assessment. Next, your child will work one on one with the same teacher to fill out a two surveys about how they feel about reading. The teacher will read the items and choices aloud to the students as children make their own selections. After these preliminary assessments your child will partake in a reading fluency intervention where they meet one on one in an empty classroom during [redacted] period with the [redacted] teacher and a registered reading therapy dog to practice reading for twenty minutes twice per week. The same registered therapy dog will be used for every session. Students will have the opportunity to choose the books they would like to read for each session from a selection of six available options at their reading level. The child will be instructed to read aloud to the dog and they are welcome to pet the dog as they read. Once per week the teacher will conduct a running record while your child is reading to measure reading fluency progress. At the end of the ten-week fluency intervention your child will complete the same surveys about their feelings about reading with the teachers. Your child will also be asked to answer three interview questions about their experience reading with the therapy dog. The interview questions

will be asked by the same [redacted] teacher they worked with throughout the study and interviews will take place individually. All interviews will be audio recorded.

3.2 What happens if I say no, I do not want to be in this research?

You may decide not to take part in the research and it will not be held against you.

3.3 What happens if I say yes, but I change my mind later?

You agree to take part in the research now. You may stop at any time and it will not be held against you.

If you decide to leave the research, contact the investigator so that the investigator can ***change the intervention schedule accordingly.***

4. INFORMATION ABOUT STUDY RISKS AND BENEFITS

4.1 Is there any way being in this study could be bad for me?

There are no physical risks associated with this study. There is, however, the potential risk of loss of confidentiality. Every effort will be made to keep your child's information confidential; however, this cannot be guaranteed. Your child may refuse to answer any of the questions and may take a break at any time during the study. You may stop your child's participation in this study at any time.

4.2 Will being in this study help me any way?

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include improved reading fluency from the practice time spent reading aloud throughout the study. Also, potential benefits could include decreased anxiety around reading and increased motivation to read from reading with the therapy dog.

5. *CONFIDENTIALITY OF SUBJECT RECORDS*

5.1 What happens to the information you collect?

Efforts will be made to limit your personal information, including research study and medical records, to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the IRB and other representatives of this organization. Your identifiable information (name, address, etc.) collected for this research study will ***not*** be used or distributed to other investigators for future research studies, even if your identifiers are removed.

University of Bridgeport Informed Consent Template

[UB HRP-502 Revised 12/3/18]

5.2 Can I be removed from the research without my OK?

The person in charge of the research study or the sponsor can remove your child from the research study without your approval. Possible reasons for removal include the child refusing to read during the reading sessions.

5.3 What else do I need to know?

The research study involves no more than minimal risk and participants will not get paid to participate.

6. CONTACT INFORMATION

6.1 Who can I talk to?

If you have questions about this research (e.g. concerns, or complaints, or think the research has hurt you), you may contact ***pbuxton@bridgeport.edu***

This research has been reviewed and approved by an Institutional Review Board. If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), you may talk to UB's IRB Administrator at (203) 576-4974 or irb@bridgeport.edu.

7. RECORD OF INFORMATION PROVIDED

7.1 What documents will be given to me?

Your signature in the next section means that you have received copies of all of the following documents:

- This "Consent to be Part of a Research Study" document.

8. SIGNATURES

University of Bridgeport Informed Consent Template

[UB HRP-502 Revised 12/3/18]

Signature Block for Children

Your signature below documents your permission for the child named below to take part in this research.

DO NOT SIGN THIS FORM AFTER THIS DATE → April 18, 2020

Printed name of child

Signature of parent or guardian | Date

Printed name of parent or guardian

- ❑ Parent
- ❑ Guardian [See note below]

Note on permission by guardians: An individual may provide permission for a child only if that individual can provide a written document indicating that he or she is legally authorized to consent to the child's general medical care. Attach the documentation to the signed document.

Signature of parent | Date

Printed name of parent

If signature of second parent not obtained, indicate why: [select one]

- ❑ Second parent is deceased
- ❑ Second parent is unknown
- ❑ Second parent is incompetent
- ❑ Second parent is not reasonably available
- ❑ Only one parent has legal responsibility for the care and custody of the child

Assent

- ❑ Obtained
- ❑ Not obtained because the capability of the child is so limited that the child cannot reasonably be consulted.

Signature of person obtaining consent and assent | Date

Printed name of person obtaining consent | Form Date: April 18, 2019

Appendix J

Letter to participating teacher

Dear Participating Teacher,

I am sending this e-mail because you are a literacy teacher at _____ school and you have agreed to participate in a research study.

I am conducting a study about how reading with a therapy dog impacts reading fluency, anxiety around reading, and motivation to read.

The participating teacher will provide fluency intervention to students individually during callback time. Some students will be reading with you and a therapy dog, and some will only be reading with you.

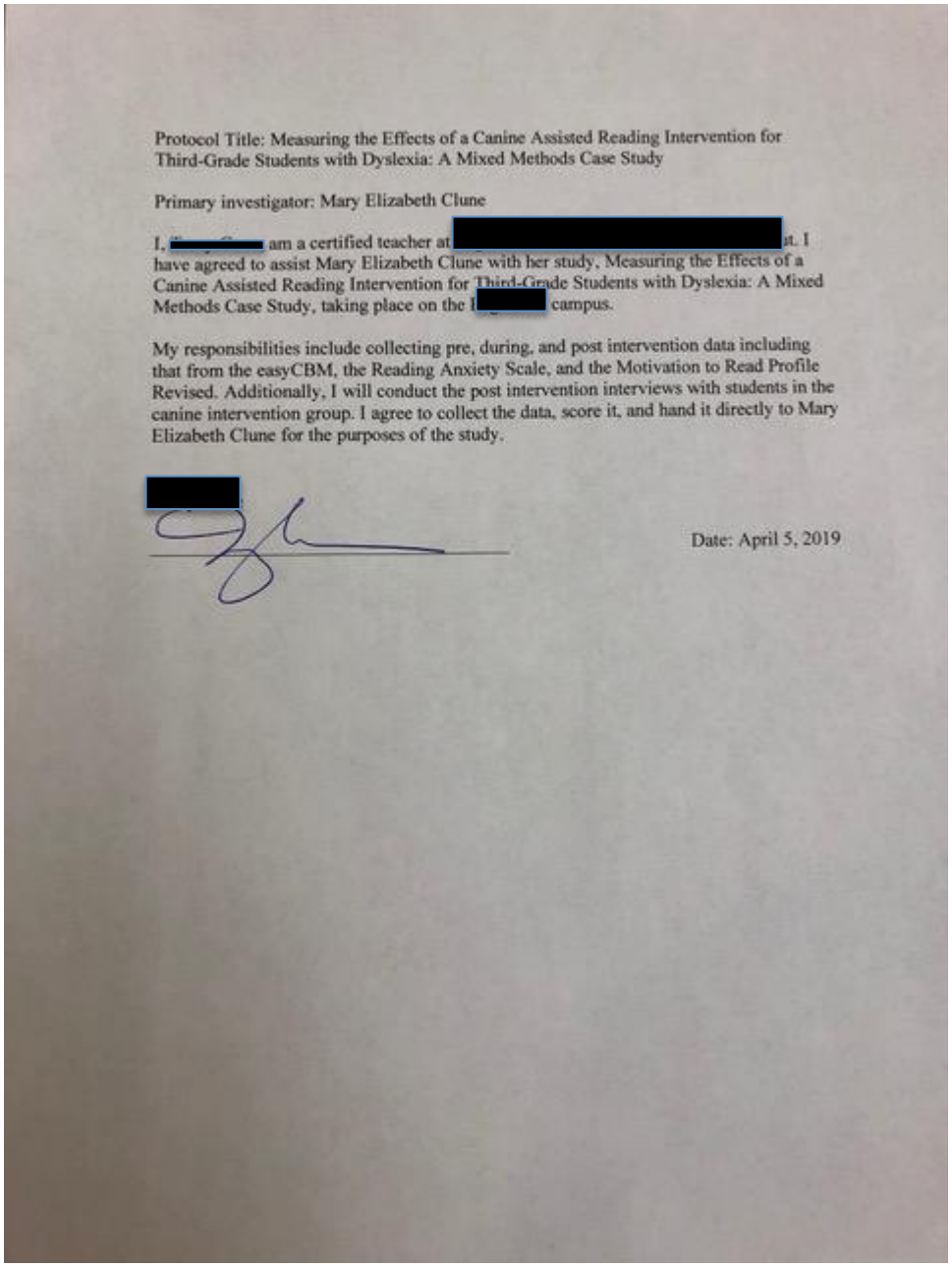
If you agree to participate in the study you agree to collaborate with the researcher and collect data on student reading, anxiety, and motivation as directed by the researcher and share all data connected to the study with the researcher.

Please review the attached materials, which include an informed consent form and a description of the study. Feel free to contact me with any questions you may have. Thank you for your consideration.

Sincerely,

Mary Elizabeth Clune

mclune@my.bridgeport.edu



Protocol Title: Measuring the Effects of a Canine Assisted Reading Intervention for Third-Grade Students with Dyslexia: A Mixed Methods Case Study

Primary investigator: Mary Elizabeth Clune

I, [redacted] am a certified teacher at [redacted]. I have agreed to assist Mary Elizabeth Clune with her study, Measuring the Effects of a Canine Assisted Reading Intervention for Third-Grade Students with Dyslexia: A Mixed Methods Case Study, taking place on the [redacted] campus.

My responsibilities include collecting pre, during, and post intervention data including that from the easyCBM, the Reading Anxiety Scale, and the Motivation to Read Profile Revised. Additionally, I will conduct the post intervention interviews with students in the canine intervention group. I agree to collect the data, score it, and hand it directly to Mary Elizabeth Clune for the purposes of the study.

[redacted]

Date: April 5, 2019

Appendix K

Therapy Dog Registration Identification

Current

- **Volunteer Name:** Mary Clune
- **Animal Team Member:** Captain
- **Registration Status:** Current
- **Registration End Date:** 06/30/2021
- **Special Initiatives:** Read With Me

Your ID #: 831474
Qualification Rating: Predictable
Expiration Date: June 30, 2021
Special Qualifications, if any: 7-special harness*

Pet Partners

To University of Bridgeport,

This letter is being written in support of Mary Elizabeth Clune as she collects data for her dissertation project during Pet Partners visits. Please be in touch should you have any questions about our support, or about the Pet Partners mission at large.

Sincerely,

Taylor Johnson, Ph.D.

National Director of Field Relations

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Appendix L

Pet Partners Confidentiality

Pet Partners has a deep regard and respect for its therapy animal teams and the important role that they play in meeting the needs of the people they interact with. Pet Partners also has high expectations regarding conduct of its teams.

Pet Partners Therapy Animal Program Policies and Procedures

1. I will abide by all Pet Partners policies and procedures, and I will adhere to the guidelines that are set forth in the Pet Partners Handler Guide and in associated updates.
2. I will represent the program in a professional manner: for example, by observing rules of privacy and confidentiality, being on time for visits, not being under the influence of drugs/alcohol, and being well-groomed and professionally dressed in accordance with facility dress codes.
3. I will uphold the code of ethics.
4. I will visit only with animals that are registered with Pet Partners and with only one animal at a time. I understand that, for safety and liability reasons, visiting may not exceed two hours per team per day.
5. I will make sure that each facility that I visit has access to these Pet Partners policies and procedures so they understand what guidelines I already follow as a visiting team.
6. I will abide by all policies, procedures, and precautions of Pet Partners and each facility I visit. If Pet Partners and my facility have two different policies on the same topic, the more conservative of the two will apply.
7. I will be responsible for my animal at all times, considering its needs and humane care first.
8. I will always stay with my animal and remain in control of the situation with the lead in my hand. I will never tie animals to people, equipment, or furniture while visiting.
9. I will clean up after my animal both inside and outside the facility, and I will abide by any facility-required cleanup rules.
10. For safety reasons, my animal must wear a collar or harness and be on lead, and I will hold the lead at all times, including during breaks.
11. Before each visit, I will abide by the Pet Partners Grooming Guidelines.
12. I will visit only in accordance with the Pet Partners health requirements.

13. I understand that animals must not be on a raw meat diet or fed raw meat foods at any time during their role as a therapy animal, and that animals from a household where a raw meat diet is fed are precluded from participating in the Therapy Animal Program.

14. I understand that I am required to wear my Pet Partners identification badge (in addition to any identification required by the facility) while providing or promoting AAI as a registered team.

15. I will not borrow money or personal items or receive any personal gratuity or gift, such as money or jewelry, from the people that I visit. Likewise, I understand that it isn't routinely acceptable to give gifts to the people that I visit, even small gifts such as candy and cookies.

16. I will not charge a fee for services that I perform in my role as a therapy animal handler.

17. In the event of an incident, accident, or unusual occurrence, I will stop visiting immediately. I will report, without reservation, all details of the incident to Pet Partners and follow Pet Partners' direction, with the understanding that all information will be treated sensitively and with complete confidentiality.

18. I will not take photographs or video of the people that I visit without first obtaining the signed consent of the client, or a legal guardian or custodian of the client. I will use the Pet Partners photo and video release waiver provided on Pet Partners' website to obtain the client's consent unless a facility provides its own photograph and video release form. Instant photos might be acceptable, but only if the photo is left with the client and if permission has been granted by the client and the facility.
19. I understand that I must obtain approved written permission from Pet Partners for each proposed use of Pet Partners logo or name in conjunction with the logo or name of any other organization.

20. I understand that, as a handler, I am not authorized to administer the Pet Partners Skills Test (PPST) or the Pet Partners Aptitude Test (PPAT) unless I am currently a licensed team evaluator. In addition, I am not authorized to teach the Pet Partners Handler Course unless I am currently a licensed instructor.

21. When approaching a facility for the first time, I will find out whether any other teams are already visiting there or if there are facility animals present. If there are, I will respect those existing relationships while also making the responsible choices for myself and my animal.

22. I understand that my animal must visit in the same type of equipment that it was evaluated in, and that a change in equipment requires a re-evaluation.

23. I understand that, any time that I am re-evaluated, the team qualification rating from the new evaluation will supersede the rating from the previous evaluation. The new rating applies immediately, even if the team's registration period hasn't yet expired. For example, if a renewing team is scored "Not Ready," the team's registration period expires early.

24. I understand that I must receive formal notification from Pet Partners about my registration status and qualifications (for example, an acceptance or renewal letter) before I may visit as a registered therapy animal team.

25. I understand that therapy animals can wear a seasonal or holiday scarf when making visits; however, for the safety of the clients and the animals, animals and handlers may not be dressed in costumes when making visits.

Code of Ethics

1. Perform duties that are consistent with your position and training.
2. Abide by the professional ethics of your profession and organizations.
3. Demonstrate a belief in and attitude of reverence for all life.
4. At all times, treat all animals, all people, and the environment with respect, dignity, and sensitivity, maintaining the quality of life and experience for all who are involved.
5. Be informed and educated about the aspects and issues that are related to AAI.
6. Demonstrate commitment, responsibility, and honesty in all phases of your activities.
7. Comply with all local, state, and federal laws and Pet Partners policies that govern AAI.

Standards of Professional Conduct

The following types of unsatisfactory conduct are serious enough that violations might result in termination from the Pet Partners Therapy Animal Program:

1. Breach of client confidentiality.
2. Abuse of any client or animal, or conduct that is detrimental to the Therapy Animal Program or Pet Partners.
3. Theft or removal from the premises, without proper authorization, of any property that belongs to a facility, a client, staff or another team.
4. Unauthorized use or possession of intoxicants, narcotics or other drugs while volunteering as a handler.
5. Being unfit to volunteer because of the influence of alcohol or drugs.
6. Harassment of any type.
7. Using the Pet Partners vest to gain public access or otherwise misrepresenting your animal as an assistance animal.